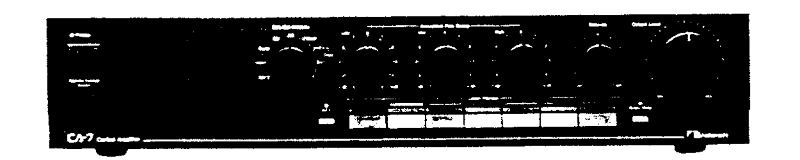


Service Manual

Nakamichi

CA-7A
CA-7
CA-7E
CA-70

Control Amplifier



fuse 500 mA TA MM/MC

CONTENTS

1. GENERAL

1.1. Voltage Selector

Voltage selector is installed on the rear panel for Saudi Arabia and Other versions of the Nakamichi CA-7. This voltage selector can select either 120 V or 220-240 V at customer's disposal.

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
	FA03556A	Package Ass'y (CA-7A)	1	02	0F04014A	Packing L	1
	FA03557A	Package Ass'y (CA-7 (Canada))	1	03	0F04000A	Packing R	1
	FA03554A	Package Ass'y (CA-7 (Australia))	1	04	0F03670A	Poly-Sheet	1
	FA03553A	Package Ass'y (CA-7 (Saudi Arabia & Other))	1		0M03457A	Voltage Seal 240V (CA-7 (Australia) & CA-7E (UK))	2
	FA03551A	Package Ass'y (CA-7E (UK))	1		0M03642A	Voltage Seal 220V-240V (CA-7 (Saudi Arabia & Other))	2
	FA03555A	Package Ass'y (CA-7E (except UK))	1		0D04047A	US Pack (CA-70)	1
	FA03552A	Package Ass'y (CA-70)	1		0D04616A	Warranty Card (CA-70)	1
01	0F03995A	Carton Box CA-7A	1				
	0F03992A	Carton Box CA-7	1				
	0F03993A	Carton Box CA-7E	1				
	0F03994A	Carton Box CA-70	1				

1.2. Package Ass'y and Parts List

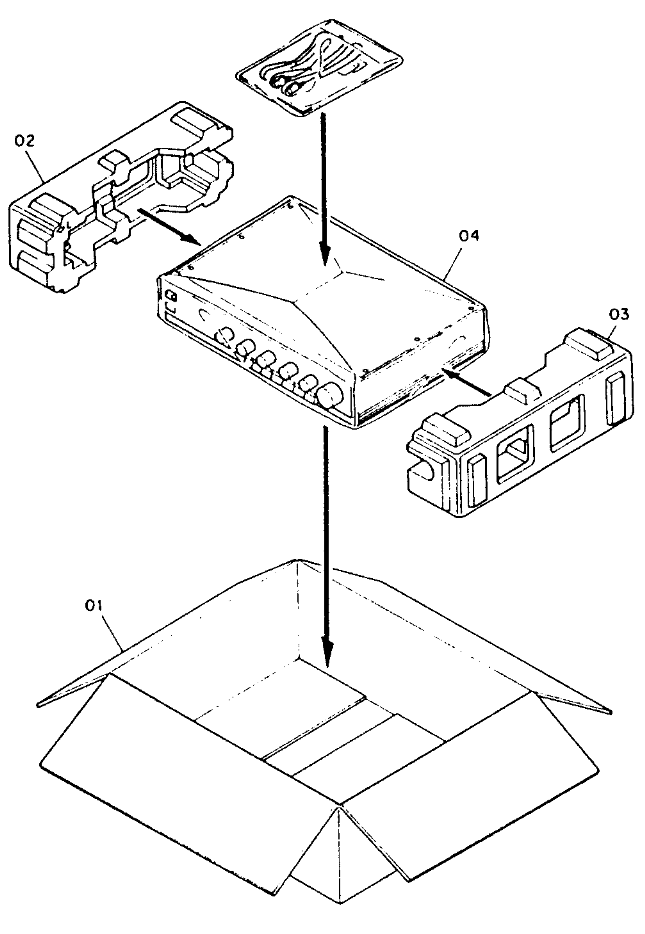


Fig. 1.1

1.3. Accessory Ass'y and Parts List

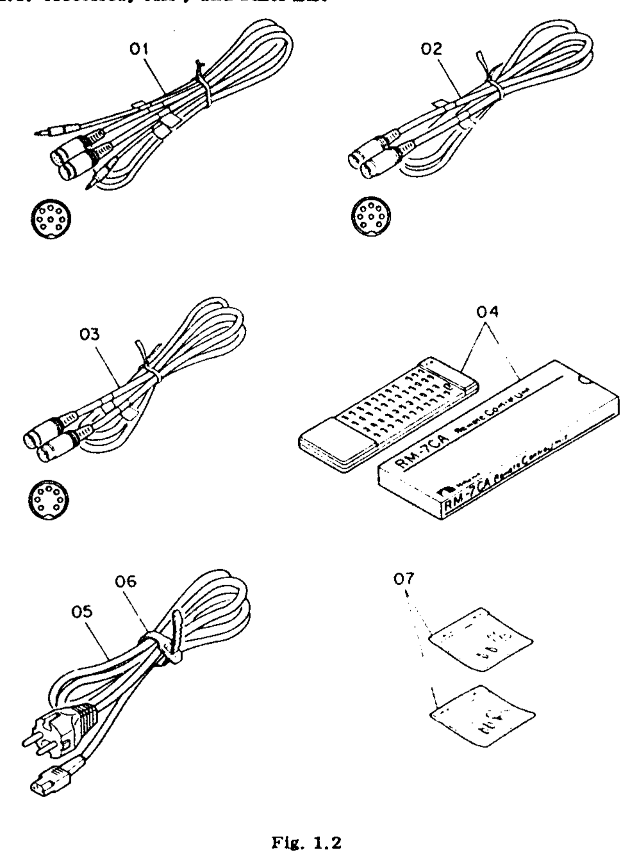


Fig. 1.2

Note: RM-7CA is supplied per unit.

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
	DA04005A	Accessory Ass'y (CA-7A)	1	07	DA04018A	Resistor Set	1
	DA03998A	Accessory Ass'y (CA-7(Canada))	1		(0B20164A)	RK 3.16 1/2W G	(1)
	DA04001A	Accessory Ass'y (CA-7 (Australia))	1		(0B20169A)	RK 11.5 1/2W G	(1)
	DA04004A	Accessory Ass'y (CA-7 (Saudi Arabia))	1		(0B20186A)	RK 26.1 1/2W G	(1)
	DA04000A	Accessory Ass'y (CA-7 (Other))	1		(0B20196A)	RK 42.2 1/2W G	(1)
	DA03997A	Accessory Ass'y (CA-7E (UK))	1		(0B20214A)	RK 100 1/2W G	(1)
	DA04003A	Accessory Ass'y (CA-7E (Switzerland))	1		(0B81652A)	Socket Pin OM-1	(4)
	DA04002A	Accessory Ass'y (CA-7E (except UK, Switzerland & Germany))	1		(0D03463A)	Poly-Bag	(1)
	DA04054A	Accessory Ass'y (CA-7E (Germany))	1		0D04663A	Owner's Manual (CA-7A, CA-7 (except Canada) & CA-7E (UK))	1
	DA03999A	Accessory Ass'y (CA-70)	1		0D04761A	Owner's Manual (CA-7 (Canada) & CA-7E (except UK))	1
01	BA06562A	DIN Cord Ass'y (Deck)	1		0D04665A	Owner's Manual (CA-70)	1
	(0H05029A)	Cord Tape	(3)		0D04760A	Owner's Manual Supplement (CA-7 (Canada) & CA-7E (except UK))	1
	(0B82777A)	DIN Cord 8P & Mini-Plug (Deck)	(1)		0D04668A	Owner's Manual Supplement (CA-7E (UK & Germany))	1
02	0B82778A	DIN Cord 8P (CDP)	1		0B04690A	Owner's Manual Supplement for Resistor (CA-7A, CA-7 (except Canada))	1
03	0B82779A	DIN Cord 7P (Tuner)	1		0D04712A	Owner's Manual Supplement for Resistor (CA-7 (Canada) & CA-7E)	1
04	DA04019A	Remote Control Unit RM-7CA	1		0D04711A	Owner's Manual Supplement for Resistor (CA-70)	1
05	0B90222A	Power Cord (CA-7A & CA-7 (Canada))	1		0D03092B	Poly-Bag	1
	0B90139A	Power Cord (CA-7 (Australia))	1		0D04449A	Important Notice Card	1
	0B90229A	Power Cord (CA-7 (Saudi Arabia))	1		0D04184D	Warranty Card (CA-7A)	1
	0B90140A	Power Cord (CA-7E (UK))	1		0D04077A	Warranty Card (CA 7 (Canada))	1
	0B90154A	Power Cord (CA-7E (Switzerland))	1		0D04666A	Price Card (CA-70)	1
	0B90138A	Power Cord (CA-7E (except UK Switzerland & Germany))	1				
06	0F03887A	Cord Band (except CA-7 (Canada) & CA-70)	1				

2. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT

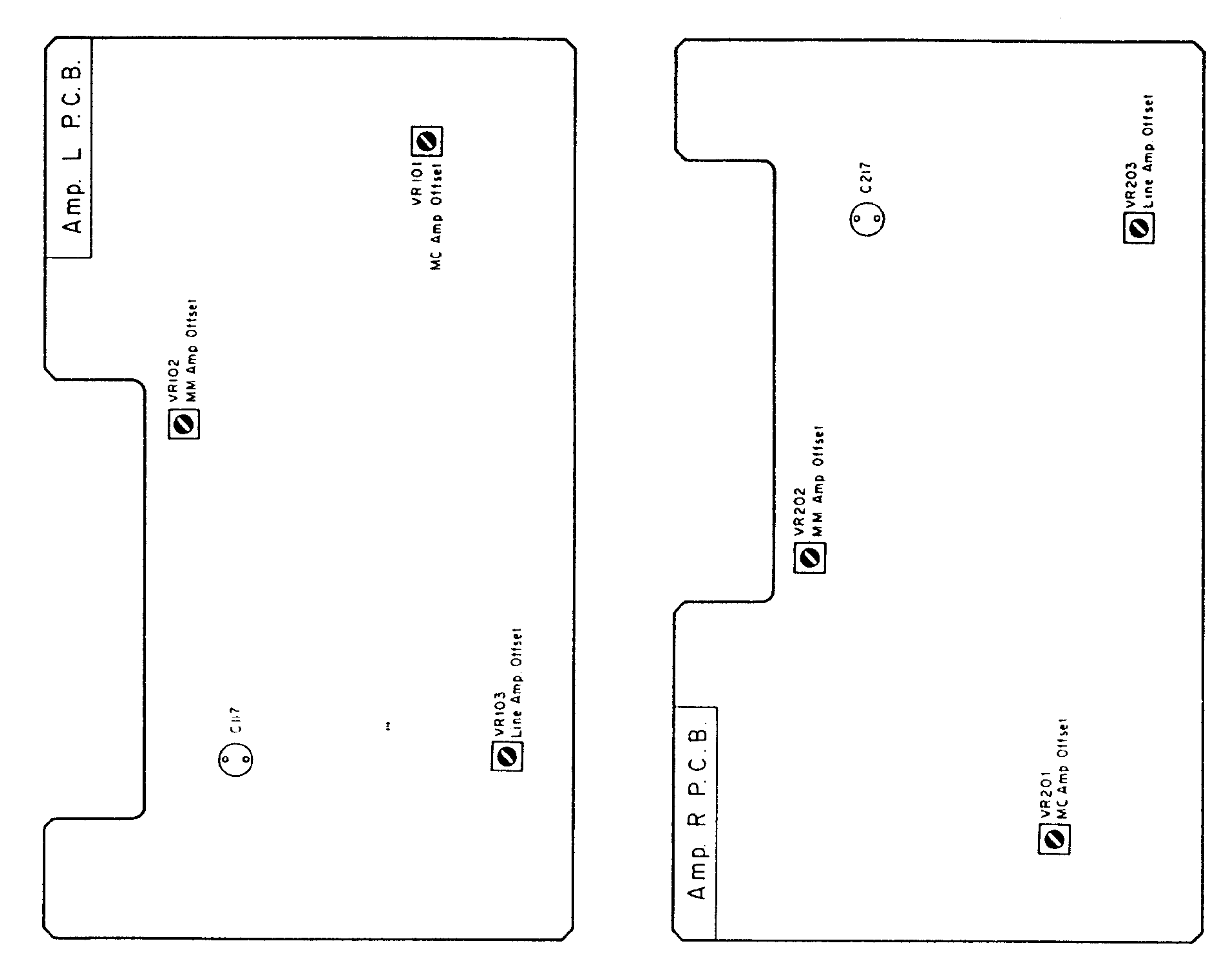


Fig. 2

3. ELECTRICAL ADJUSTMENTS

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUST-MENT	REMARKS
1	MC Amp. offset Adjustment	None	DC Milli-voltmeter to Pin 7 of IC101 (IC201) on Amp. L (R) P.C.B.	Gain Selectors - 30 dB	Amp. L (R) P.C.B. VR101 VR201	Adjust VR101 (VR201) to obtain 0 ±50 mV on the DC millivoltmeter.
2	MM Amp. Offset Adjustment	None	DC Milli-voltmeter to Pin 7 of IC102 (IC202) on Amp. L (R) P.C.B.	Cartridge Selectors - MM	Amp. L (R) P.C.B. VR102 VR202	Adjust VR102 (VR202) to obtain 0 ±10 mV on the DC millivoltmeter.
3	Line Amp. Offset Adjustment	None	DC Milli-voltmeter to Line output Jacks 1	Listen Monitor Selector - CD	Amp. L (R) P.C.B. VR103 VR203	1. Short C117 (C217) on Amp. L (R) P.C.B. Ass'y. 2. Adjust VR103 (VR203) to obtain 0 ±10 mV on the DC millivoltmeter. 3. Remove the short of C117 (C217).

4. MECHANISM ASS'Y AND PARTS LIST

4.1. Synthesis

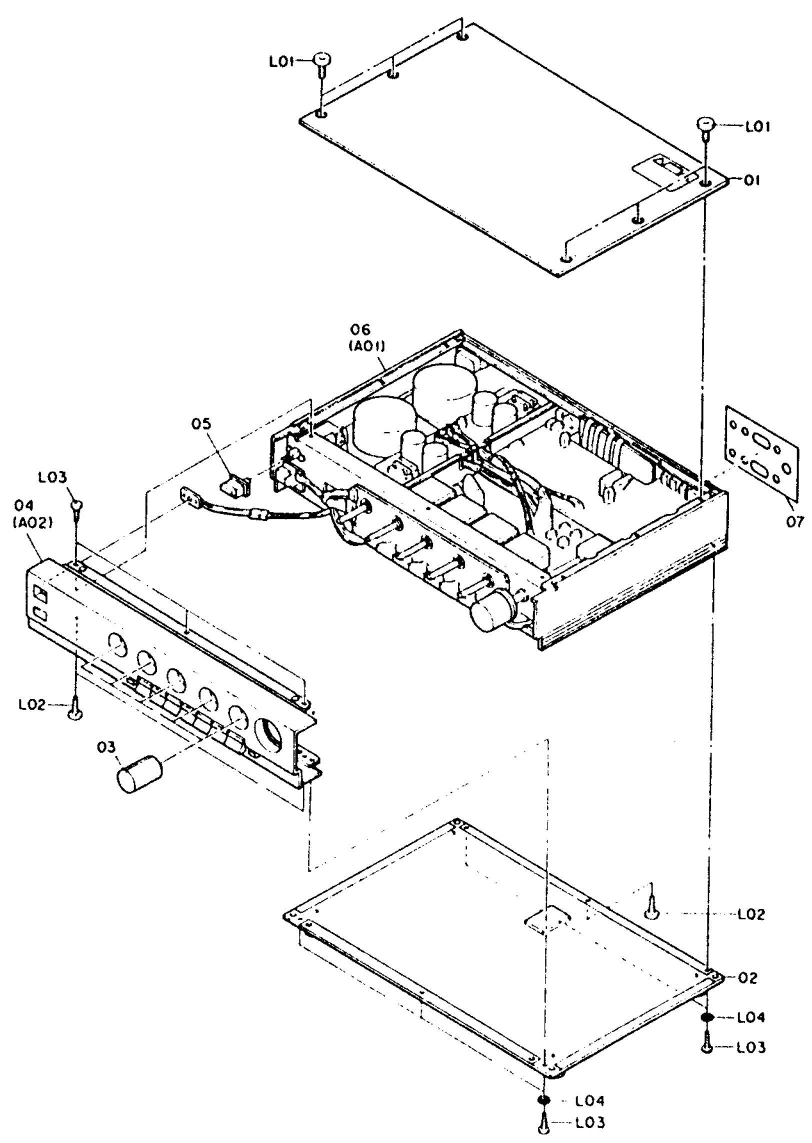


Fig. 4.1

Schematic Ref. No.	Part No.	Description	Q'ty
		Synthesis Serial No.: B10701001 -	
01	HA05203A	Top Cover Ass'y (CA-7A, CA-7 & CA-7E (except Germany))	1
	(0H04993B)	Top Cover	(1)
	(0J05266A)	Top Cover Cushion F	(1)
	(0J05267B)	Top Cover Cushion R	(1)
	(0H04993A)	Vibration Isolating Sheet TP	(1)
	(0M04377B)	Caution Label	(1)
	HA05247A	Top Cover Ass'y (CA-7E (Germany) & CA-70)	1
	(0H04993B)	Top Cover	(1)
	(0J05266A)	Top Cover Cushion F	(1)
	(0J05267B)	Top Cover Cushion R	(1)
	(0J05354A)	Vibration Isolating Sheet TPJB107	(1)
	(0M04377B)	Caution Label	(1)
02	HA05204A	Bottom Cover Ass'y	1
	(0H04994B)	Bottom Cover	(1)
	(0J03564A)	Leg T-H	(4)
	(0J05267A)	Top Cover Cushion R	(2)
	(0J05270A)	Bottom Cover Cushion S	(2)
	(0J05287A)	Vibration Isolating Sheet BT	(1)
	(0E00948A)	BT3x10 ⊕ Binding (Black Chromate)	(4)
	(0M04377B)	Caution Label	(1)
03	HA05126A	AFT Knob Ass'y	5

Schematic Ref. No.	Part No.	Description	Q'ty
04	HA05144A	Front Panel Ass'y (CA-7A)	1
	HA05143A	Front Panel Ass'y (CA-7)	1
	HA05146A	Front Panel Ass'y (CA-7E)	1
	HA05145A	Front Panel Ass'y (CA-70)	1
05	HA04799B	Power Switch Knob Ass'y	1
06	JA04262A	Chassis Ass'y (CA-7A)	1
	JA04263A	Chassis Ass'y (CA-7 (Canada))	1
	JA04260A	Chassis Ass'y (CA-7 (Australia))	1
	JA04265A	Chassis Ass'y (CA-7 (Saudi Arabia))	1
	JA04259A	Chassis Ass'y (CA-7 (Other))	1
	JA04261A	Chassis Ass'y (CA-7E (except Germany))	1
	JA04285A	Chassis Ass'y (CA-7E (Germany))	1
	JA04258A	Chassis Ass'y (CA-70)	1
07	0M04887A	Caution Sheet (CA-7A, CA-7 & CA-7E)	1
—	0M04886A	Caution Sheet (CA-70)	1
—	0M03797A	Voltage Seal 240V (CA-7E (UK))	1
—	0M04679A	SS Approval Label G	1
—	0M04836A	DBP Label (CA-7E (West Germany))	1
L01	0H05012A	M4x8 ⊕S	6
L02	0E03366A	BT3x8 ⊕ Binding Projected (Black Chromate)	3
L03	0E00921A	BT3x8 ⊕ Binding (Black Chromate)	10
L04	0J05315A	Washer 4mm (Black)	5

4.2. Chassis Ass'y (A01)

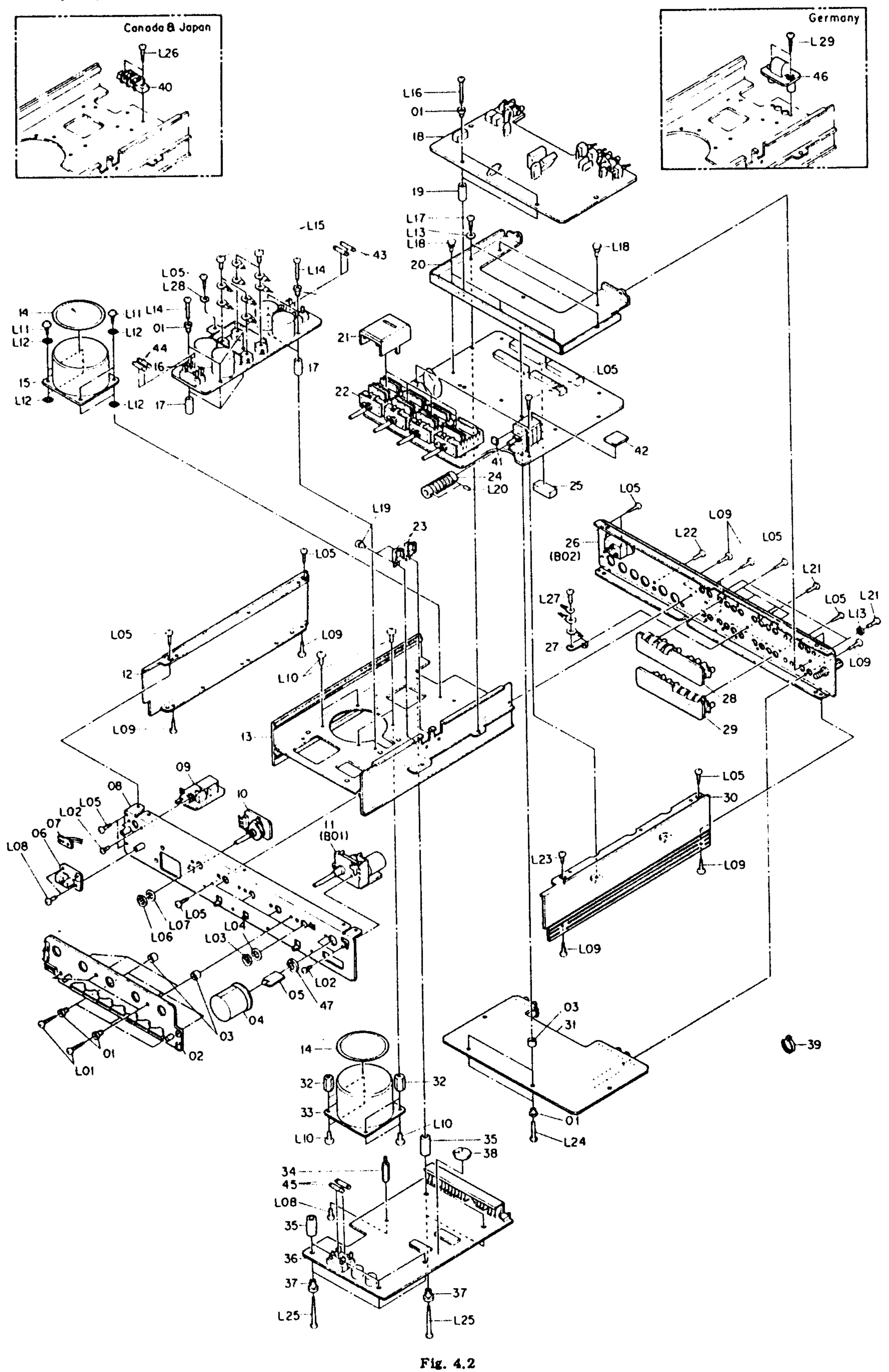


Fig. 4.2

Schematic Ref. No.	Part No.	Description	Q'ty
A01	JA04262A	Chassis Ass'y (CA-7A)	1
	JA04263A	Chassis Ass'y (CA-7 (Canada))	1
	JA04260A	Chassis Ass'y (CA-7 (Australia))	1
	JA04265A	Chassis Ass'y (CA-7 (Saudi Arabia))	1
	JA04259A	Chassis Ass'y (CA-7 (Other))	1
	JA04261A	Chassis Ass'y (CA-7E (except Germany))	1
	JA04285A	Chassis Ass'y (CA-7E (Germany))	1
	JA04258A	Chassis Ass'y (CA-70) Serial No.: B10701001 -	1
01	0J04703A	Collar Bushing TB-300	15
02	BA06340A	Function Switch P.C.B. Ass'y	1
03	0J05012A	Collar Bushing TA-305	8
04	HA05127B	Volume Knob Ass'y	1
	(0H04999B)	Volume Knob Lens	(1)
	(0H04990B)	Volume Knob	(1)
	(0H05223B)	Volume Knob Base	(1)
05	BA06343A	Volume Indicator P.C.B. Ass'y	1
06	BA06341A	Remote Control Sensor P.C.B. Ass'y	1
07	BA06335A	Power Indicator P.C.B. Ass'y	1
08	JA04267A	Front Chassis Ass'y	1
09	BA06328A	Power Switch P.C.B. Ass'y (CA-7A, CA-7 (Canada) & CA-70)	1
	BA06568A	Power Switch P.C.B. Ass'y (CA-7 (Australia) & CA-7E (except Germany))	1
	BA06589A	Power Switch P.C.B. Ass'y (CA-7 (Saudi Arabia & Other))	1
	BA06799A	Power Switch P.C.B. Ass'y (CA-7E (Germany))	1
10	BA06327A	Record Out Selector P.C.B. Ass'y	1
11	JA04253A	Volume Control Ass'y	1
12	0H04995B	Side Panel L	1
13	0J05220C	Main Chassis	1
14	0M04860A	Power Transformer Label	2
15	0B50083B	Power Transformer (CA-7A & CA-7 (Canada))	1
	0B50084A	Power Transformer (CA-7 (Australia) & CA-7E)	1
	0B50085A	Power Transformer (CA-7 (Saudi Arabia & Other))	1
	0B50079A	Power Transformer (CA-70)	1
16	BA06332A	Power Supply P.C.B. Ass'y CA-7A & CA-7 (Canada, Saudi Arabia & Other))	1
	BA06333A	Power Supply P.C.B. Ass'y (CA-7 (Australia) & CA-7E)	1
	BA06777A	Power Supply P.C.B. Ass'y (CA-7E (Germany))	1
	BA06331A	Power Supply P.C.B. Ass'y (CA-70)	1
17	0J05008A	Collar Bush ing TA-310	5
18	BA06322A	Amp. L P.C.B . Ass'y	1
19	0J04704A	Collar Bushin g TA-314	2
20	0J05221A	Shield Plate	1
21	0H04988B	Switch Cover	4
22	BA06324A	Input Selector P.C.B. Ass'y	1
23	0J05256A	Wire Holder LWS-2W	2
24	0J05233A	Volume Joint Ar m	1
25	0J05283A	Cushion	1
26	HA05133A	Rear Panel Ass'y (CA-7A)	1
	HA05134A	Rear Panel Ass'y (CA-7 (Canada))	1
	HA05131A	Rear Panel Ass'y (CA-7 (Australia))	1
	HA05130A	Rear Panel Ass'y (CA-7 (Saudi Arabia & Other))	1
	HA05132A	Rear Panel Ass'y (CA-7E (except Germany))	1
	HA05255A	Rear Panel Ass'y (CA-7E (Germany))	1
	HA05129A	Rear Panel Ass'y (CA- 70)	1
27	0J05246A	Ground Bracket	1
28	BA06325A	Pin Jack L P.C.B. Ass'y	1
29	BA06326A	Pin Jack R P.C.B. Ass'y	1
30	0H04996C	Side Panel R	1
31	BA06323A	Amp. R P.C.B. Ass'y	1
32	0J05245A	Transformer Spacer	4
33	0B50080B	Power Transformer (CA-7A & CA-7 (Canada))	1
	0B50081A	Power Transformer (CA-7 (Australia) & CA-7E)	1
	0B50082A	Power Transformer (CA-7 (Saudi Arabia & Other))	1
	0B50078A	Power Transformer (CA-70)	1
34	0J05251A	Spacer 20mm	1
35	0J05249A	Collar Bushing NA-320	5
36	BA06337A	Logic P.C.B. Ass'y (CA-7A & CA-7 (Canada, Saudi Arabia & Other))	1
	BA06338A	Logic P.C.B. Ass'y (CA-7 (Australia) & CA-7E)	1
	BA06336A	Logic P.C.B. Ass'y (CA-70)	1
37	0J05019A	Collar Bushing NB-300	5
38	0B90141A	Lithium Battery CR2032-FT	1
39	0B90019A	Insu-Lock SKB-80	23
40	0B81684A	2P Terminal (CA-7 (Canada) & CA-70)	1
41	0J05310A	BS Damper 2VR107	2
42	0J05309A	BS Damper 1VR107	1
43	0B90230A	Fuse 500mA (CA-7A, CA-7 (Canada, Saudi Arabia & Other))	2
	0B08252A	Fuse T250mA (CA-7 (Australia) & CA-7E)	2
	0B90122A	Fuse 500mA (CA-70)	2
44	0B90231A	Fuse 1A (CA-7A, CA-7 (Canada, Saudi Arabia & Other))	2
	0B08457A	Fuse T500mA (CA-7 (Australia) & CA-7E)	2
	0B90244A	Fuse 1A (CA-70)	2
45	0B90246A	Fuse 500mA (CA-7A, CA-7 (Canada, Saudi Arabia & Other))	2
	0B08252A	Fuse T250mA (CA-7 (Australia) & CA-7E)	2
	0B90122A	Fuse 500mA (CA-70)	2
46	BA06688A	Line Filter P.C.B. Ass'y (CA-7E (Germany))	1
47	0J05258B	Selector Knob Himelon	1
L01	0E00870A	BT3x14 ⊕Binding	6
L02	0E00612A	M3x6 ⊕Pan (2A)	4
L03	—	Nut (Rotary Switch)	(4)
L04	—	Washer (Rotary Switch)	(4)
L05	0E00921A	BT3x8 ⊕Binding (Black Chromate)	19
L06	—	Nut (Volume)	(1)
L07	—	Washer (Volume)	(1)
L08	0E00896A	M3x6 ⊕Binding	3
L09	0E03366A	BT3x8 ⊕Binding Projected (Black Chromate)	9
L10	0E03310A	M4x6 ⊕Binding (Black Chromate)	8
L11	0E03278A	BT3x8 ⊕Binding with Washer	4
L12	0J05313A	Washer 4x8x1.0 Fiber with Adhesive Tape	8
L13	0E03406A	Washer 3mm (Black)	4
L14	0E00739A	M3x18 ⊕Binding (Bronze)	5
L15	—	M4x6 ⊕Binding (Gold)	4
L16	0E03363A	M3x25 ⊕Binding (Bronze)	2
L17	0E03028A	BT3x8 ⊕Binding (Nickel)	2
L18	0J05254A	Plastic Rivet 3x5.5	5
L19	0J05255A	Plastic Rivet 3x6.5	2
L20	0E03005A	M3x5 Hex. Socket Head	2
L21	0E00594A	M3x8 ⊕Binding (Bronze)	4
L22	0E00818A	M3x8 ⊕Binding (Black Chromate)	1
L23	0E00941A	BT3x5 ⊕Binding (Black Chromate)	1
L24	0E03364A	M3x14 ⊕Binding (Bronze)	2
L25	0E03362A	BT3x30 ⊕Binding	5
L26	0E03403A	BT3x14 ⊕Binding (Black Chromate) (CA-7 (Canada) & CA-70)	2
L27	0E03395A	M3x8 ⊕Binding	1
L28	0E03410A	Washer 4mm (Black)	1
L29	0E03294A	BT3x14 ⊕Binding (Black Chromate)	2

4.3. Front Panel Ass'y (A02)

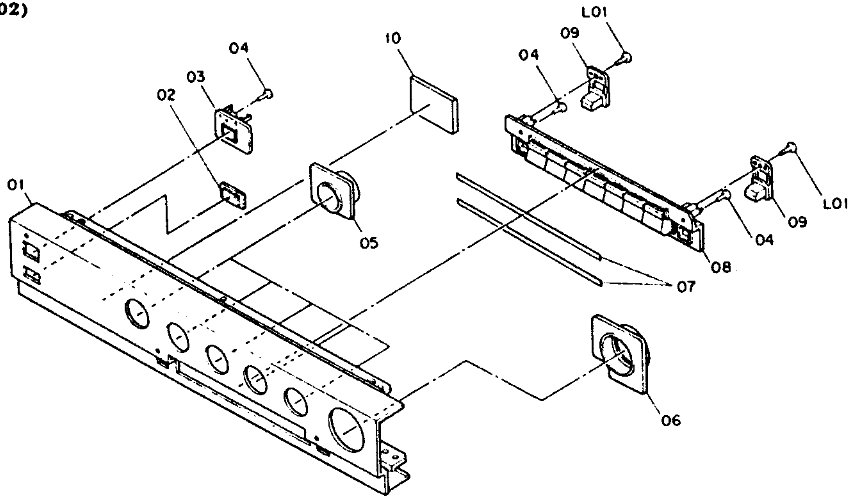


Fig. 4.3

4.4. Volume Control Ass'y (B01)

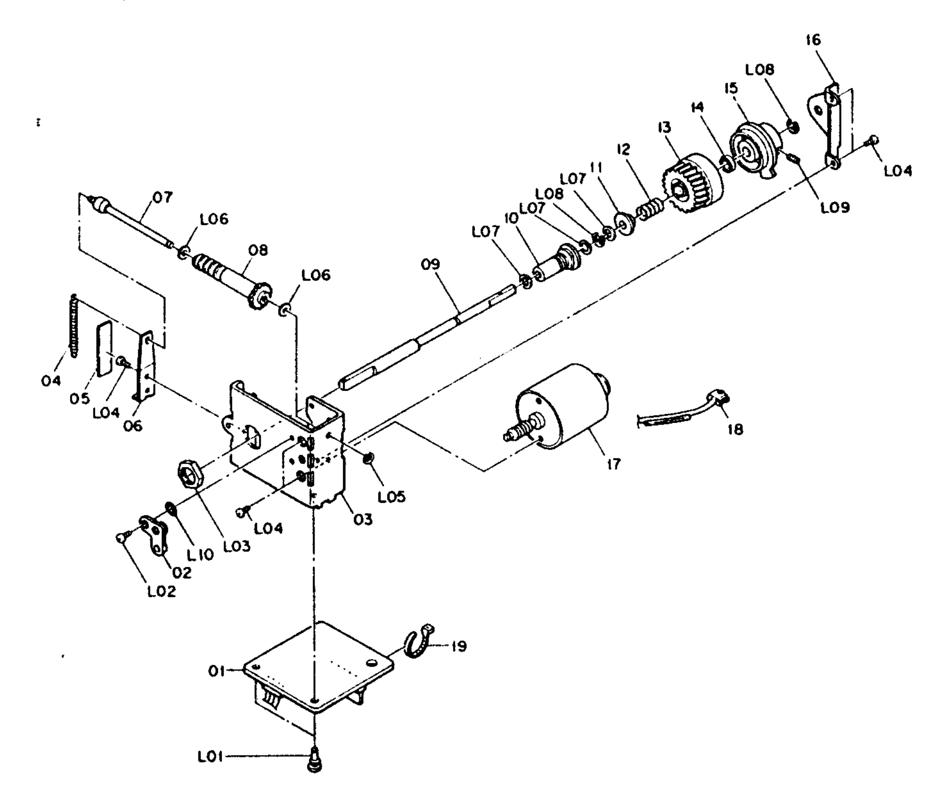


Fig. 4.4

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
A02	HA05144A	Front Panel Ass'y (CA-7A)	1	04	0H04639B	Lens	3
	HA05143A	Front Panel Ass'y (CA-7)	1	05	0H04648B	Volume Knob Holder	5
	HA05146A	Front Panel Ass'y (CA-7E)	1	06	0H04998A	Volume Holder	1
	HA05145A	Front Panel Ass'y (CA-70)	1	07	0J05277A	Adhesive Tape	2
		Serial No.: B10701001 -		08	HA05128C	Input Button Ass'y	1
				09	0H04992A	Mute Button	2
01	0H05003B	Front Panel (CA-7A)	1	10	0J05286A	Vibration Isolating Sheet F	1
	0H04989B	Front Panel (CA-7)	1	L01	0E00855A	BT2x6 ⊕ Binding	2
	0H05005B	Front Panel (CA-7E)	1				
	0H05004B	Front Panel (CA-70)	1				
02	0H04777B	Remote Control Lens	1				
03	0J05218A	Power Switch Knob Guide	1				

4.5. Rear Panel Ass'y (B02)

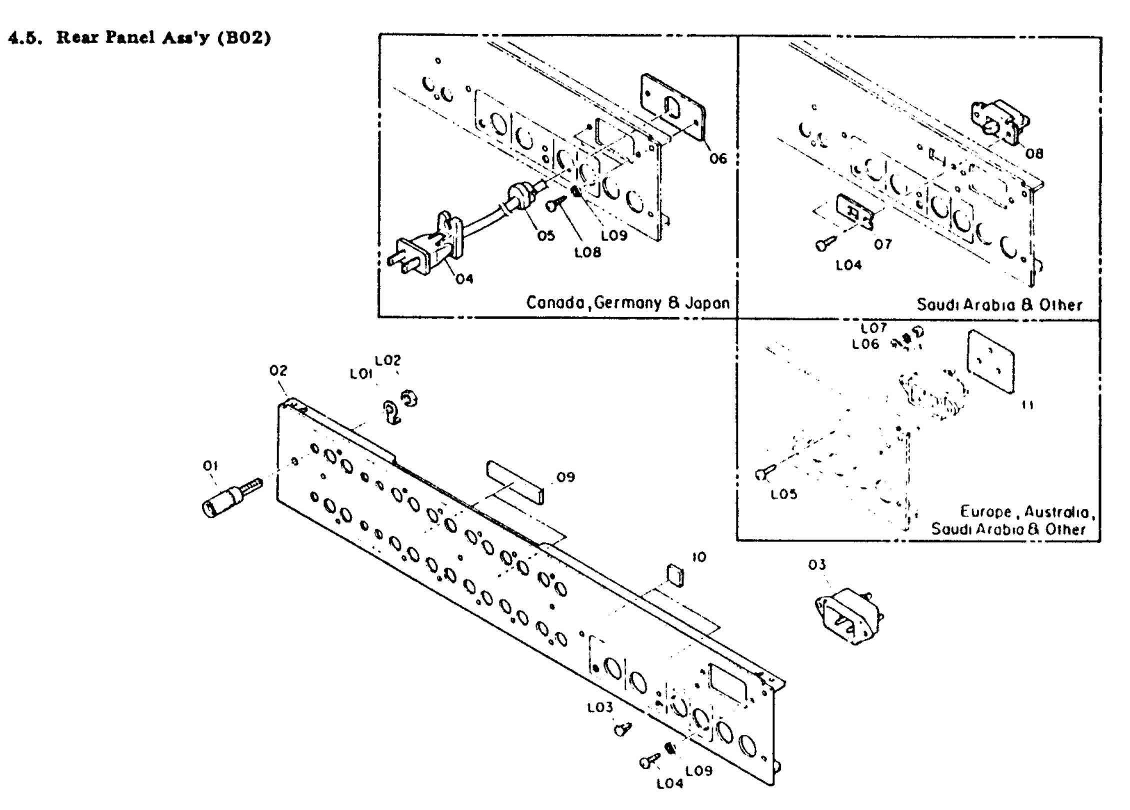


Fig. 4.5

Schematic Ref. No.	Part No.	Description	Q'ty
B01	JA04253A	Volume Control Ass'y Serial No.: B10701001 -	1
01	BA06342A	Motor P.C.B. Ass'y	1
02	0J05231A	Thrust Spring B	1
03	0J05239A	Volume Chassis	1
04	0J05243A	Warm Shaft Spring	1
05	0J05282A	Cushion	1
06	0J05241A	Worm Thrust Spring	1
07	JA04255A	Worm Shaft Ass'y	1
08	0J05232B	Worm Gear	1
09	0J05234A	Volume Shaft	1
10	0J05235A	Volume Bearing	1
11	0J05230A	Spring Flange	1
12	0J05242A	Friction Spring	1
13	0J05228A	Volume Gear	12
14	0J05236A	Ball Bearing 4mm	1
15	0J05229B	Clutch Disc	1
16	0J05240A	Volume Shaft Holder	1
17	JA04257A	Volume Control Motor Ass'y	1
18	0B82789A	2P-H Connector	1
19	0B90019A	Insu-lock SKB-80	1
L01	0J05254A	Plastic Rivet 3x5.5	2
L02	0E00922A	M2x3 ⊕Pan (Black Chromate)	1
L03	0E00150A	Nut Hex. M8	1
L04	0E00783A	M2x3 ⊕Pan (Black Chromate)	5
L05	0E00042A	E-Ring 1.5mm	1
L06	0E03356A	Washer 2.1x4x0.5	2
L07	0E03357A	Washer 4.1x6x0.25	3
L08	0E00181A	E-Ring 3mm	2
L09	0E03005A	M3x5 Cup Point Hex. Socket Head	1
L10	0E03061A	Plastic Washer 2.1mm	1
B02	HA05133A	Rear Panel Ass'y (CA-7A)	1
	HA05134A	Rear Panel Ass'y (CA-7 (Canada))	1
	HA05131A	Rear Panel Ass'y (CA-7 (Australia))	1
	HA05130A	Rear Panel Ass'y (CA-7 (Saudi Arabia & Other))	1
	HA05132A	Rear Panel Ass'y (CA-7E (except Germany))	1
	HA05255A	Rear Panel Ass'y (CA-7E (Germany))	1
	HA05129A	Rear Panel Ass'y (CA-70) Serial No.: B10701001 -	1
01	0B81685A	Ground Terminal T-5435	1
02	0H04997C	Rear Panel (CA-7A)	1
	0H05007C	Rear Panel (CA-7 (Canada))	1
	0H05011C	Rear Panel (CA-7 (Australia))	1
	0H05006C	Rear Panel (CA-7 (Saudi Arabia & Other))	1
	0H05008C	Rear Panel (CA-7E (except Germany))	1
	0H05079A	Rear Panel (CA-7E (Germany))	1
	0H05009C	Rear Panel (CA-70)	1
03	0B90087A	AC Inlet (except CA-7 (Canada), CA-7E (Germany) & CA-70)	1
04	0B90156A	Power Cord SJ17328 (CA-7 (Canada))	1
	0B80124A	Power Cord (CA-7E (Germany))	1
	0B80085A	Power Cord (CA-70)	1
05	0B90157A	Cord Bushing (CA-7 (Canada) & CA-7E (Germany))	1
	0B90186A	Cord Bushing (CA-70)	1
06	0H04772A	Bushing Holder (CA-7 (Canada) & CA-7E (Germany))	1
	0H04856A	Bushing Holder (CA-70)	1
07	0M03948A	Voltage Lock Plate (CA-7 (Saudi Arabia & Other))	1
08	0B07092U	Voltage Selector (CA-7 (Saudi Arabia & Other))	1
09	0J05308A	Vibration Isolating Sheet 2R	2
10	0J05307A	Vibration Isolating Sheet 1R	2
11	0B60430A	AC Receptacle P.C.B. (CA-7 (Australia, Saudi Arabia & Other) & CA-7E (except Germany))	1
—	0M03700A	Earth Mark Label (CA-7E)	1
L01	—	Earth Lug (Ground Terminal)	(1)
L02	—	Nut (Ground Terminal)	(1)
L03	0J05108A	Hole Plug (CA-7A, CA-7 & CA-70)	1
L04	0E00594A	M3x8 ⊕Binding (Bronze) (except CA-7 (Canada), CA-7E (Germany) & CA-70)	2
L05	0E00756A	M4x8 ⊕Binding (Bronze) (CA-7E (except Germany))	1
L06	0E00078A	Washer 4mm (CA-7E (except Germany))	1
L07	0E00669A	Nut Hex. M4 (CA-7E (except Germany))	1
L08	0E00921A	BT3x8 ⊕Binding (Black Chromate) (CA-7 (Canada), CA-7E (Germany) & CA-70)	2
L09	0E03406A	Washer 3mm (Cu Black) (CA-7A, CA-7 (Australia & Other) & CA-7E)	2

5. MOUNTING DIAGRAMS AND PARTS LIST

Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.
2. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
3. Abbreviation for part name:
TR — Transistor, SiD — Silicon Diode, ZD — Zener Diode
RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor
CE — Electrolytic Capacitor, CM — Mylar Capacitor, CC — Ceramic Capacitor, CP — PP Capacitor
CMM — Metalized Mylar Capacitor, CSP — Polystyrene Capacitor, C — Mica Capacitor
4. Part name marked with * shows a chip part. (RK*: Chip Carbon Resistor)

5.1. Power Switch P.C.B. Ass'y

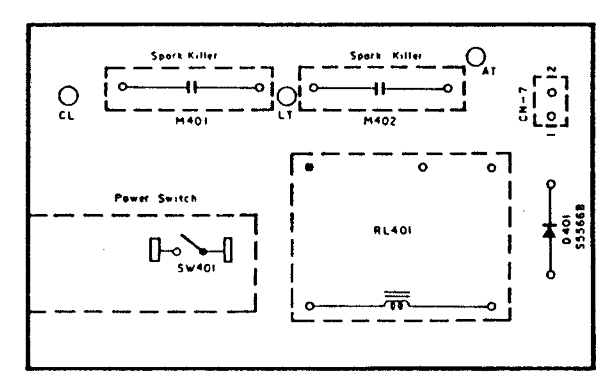


Fig. 5.1.1 For CA-7A, CA-7 (Canada) & CA-70

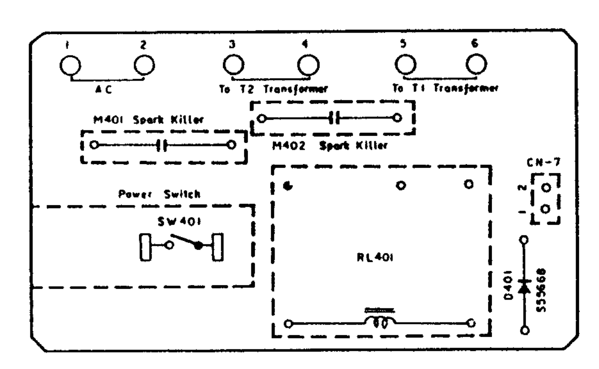


Fig. 5.1.2 For CA-7 (Australia) & CA-7E

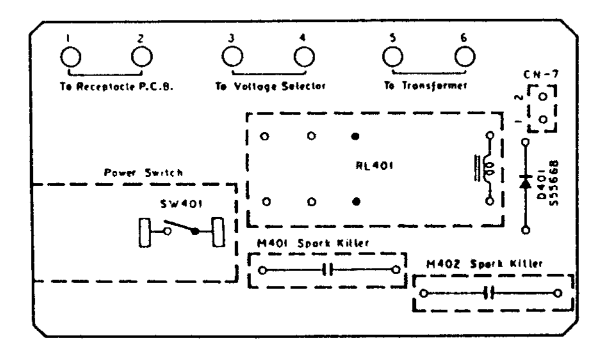


Fig. 5.1.3 For CA-7 (Saudi Arabia & Other)

Schematic Ref. No.	Part No.	Description
	BA06481A	Set B P.C.B. Ass'y (CA-7A, CA-7 (Canada) & CA-70)
	BA06566A	Set B P.C.B. Ass'y (CA-7 (Australia, Saudi Arabia & Other) & CA-7E)
Q320	0B10198A	TR 2SA1358
Q321	0B10199A	TR 2SC3421
	0B82865B	Pin Ground Code (1)
	0E03319A	M3x8 ⊕ Binding (Nickel) (3)
	0E03395A	M3x8 ⊕ Binding Cu (2)
	0J05221B	Shield Plate (1)
	0J05254A	Plastic Rivet 3x5.5 (6)
	0J05263A	Volume Plate (1)
	0J05290A	Heat Sink B (1)
	0J05309A	BS Damper 1 (1)
	0J05310A	BS Damper 2 (2)
	0J05312A	Tape 2 (4)
	BA06324A	Input Selector P.C.B. Ass'y (1)

Schematic Ref. No.	Part No.	Description
	BA06325A	Pin Jack L P.C.B. Ass'y (1)
	BA06326A	Pin Jack R P.C.B. Ass'y (1)
	BA06327A	Record Out Selector P.C.B. Ass'y (1)
	BA06335A	Power Indicator P.C.B. Ass'y (1)
	BA06328A	Power Switch P.C.B. Ass'y (CA-7A, CA-7 (Canada) & CA-70) (1)
	BA06328A	Power Switch P.C.B. Ass'y (CA-7A, CA-7 (Canada) & CA-70)
	0B60402C	Power Switch P.C.B.
D401	0B12362A	SiD S5566B
RL401	0B90212A	Relay DC24V
SW401	0B71006A	Power Switch
CN7	0B81223A	2P-T Post (White)
M401,402	0B90213A	Spark Killer

Schematic Ref. No.	Part No.	Description
	BA06568A	Power Switch P.C.B. Ass'y (CA-7 (Australia) & CA-7E (except Germany))
	BA06799A	Power Switch P.C.B. Ass'y (CA-7E (Germany))
	0B60427A	Power Switch P.C.B.
D401	0B06109A	SiD GP08B
RL401	0B90212A	Relay DC24V
SW401	0B71006A	Power Switch
CN7	0B81223A	2P-T Post (White)
M401,402	0B90232A	Spark Killer
	0B90019A	Insu-Lock SKB80 (1)
	BA06589A	Power Switch P.C.B. Ass'y (CA-7 (Saudi Arabia & Other))
	0B60429A	Power Switch P.C.B.
D401	0B06109A	SiD GP08B
RL401	0B90240A	Relay DC24V
SW401	0B71006A	Power Switch
CN7	0B81223A	2P-T Post (White)
M401,402	0B90232A	Spark Killer
	0B90019A	Insu-Lock SKB80 (2)

5.2. Power Indicator P.C.B. Ass'y

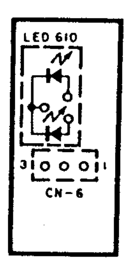


Fig. 5.2

5.3. Volume Indicator P.C.B. Ass'y

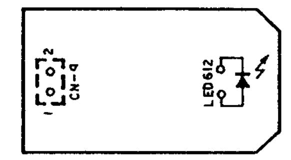


Fig. 5.3

5.4. Remote Control Sensor P.C.B. Ass'y

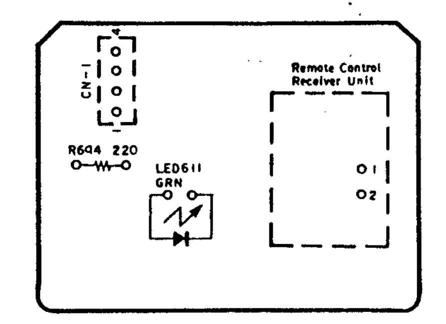


Fig. 5.4

5.5. Motor P.C.B. Ass'y

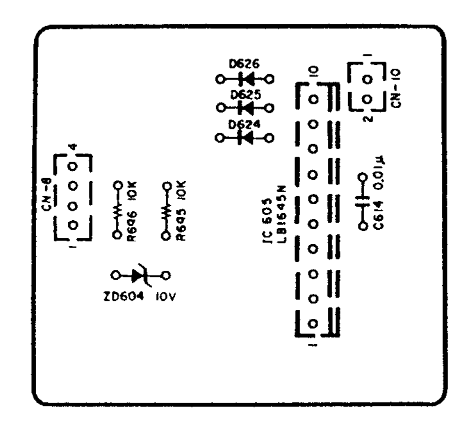


Fig. 5.5

5.6. Record Out Selector P.C.B. Ass'y

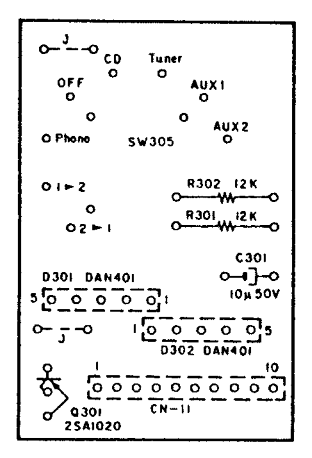


Fig. 5.6.1
Serial No.: B10701061 -

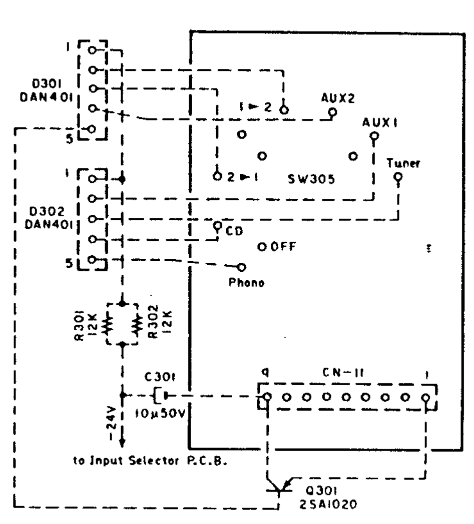


Fig. 5.6.2
Serial Nos.: B10701001 - 01060

Schematic Ref. No.	Part No.	Description
	BA06335A	Power Indicator P.C.B. Ass'y
	0B60404A	Power Indicator P.C.B.
LED610	0B16021A	LED* SLM23DMWP-97 (GRN,ORN)
CN6	0B82790A	3P-H Connector
	BA06343A	Volume Indicator P.C.B. Ass'y
	0B60409B	Volume Indicator P.C.B.
LED612	0B12402A	LED SLH-34MC (GRN)
CN9	0B82788B	2P-H Connector

Schematic Ref. No.	Part No.	Description
	BA06341A	Remote Control Sensor P.C.B. Ass'y
	0B60407B	Remote Control Sensor P.C.B.
LED611	0B12353A	LED SLB-26MG (GRN)
R694	0B09661A	RK 220 1/6W J
CN1	0B81038A	4P-S Post
	0B19005A	Remote Control Receiver Unit (1)
	0J05244A	LED Holder (1)
	BA06342A	Motor P.C.B. Ass'y
	0B60408B	Motor P.C.B.
IC605	0B11250A	IC LB1645N
ZD604	0B12309A	ZD 10V MTZ10C
D624,625 626	0B06398A	SiD 1SS176
R695,696	0B09701A	RK 10K 1/6W J
C614	0B05681A	CM 0.01μ 50V J
CN8	0B82787A	4P-H Connector
CN10	0B81036A	2P-S Post

Schematic Ref. No.	Part No.	Description
	BA06327A	Record Out Selector P.C.B. Ass'y
	0B60401C	Record Out Selector P.C.B.
Q301	0B10015A	TR 2SA1020 (O,Y)
D301,302	0B12497A	D-Array DAN401
R301,302	0B09263A	RK 12K 1/4W J
C301	0B40461A	CE 10μ 50V
SW305	0B70090A	Rotary Switch
CN11	0B83049A	10P Connector

5.7. Pin Jack L P.C.B. Ass'y

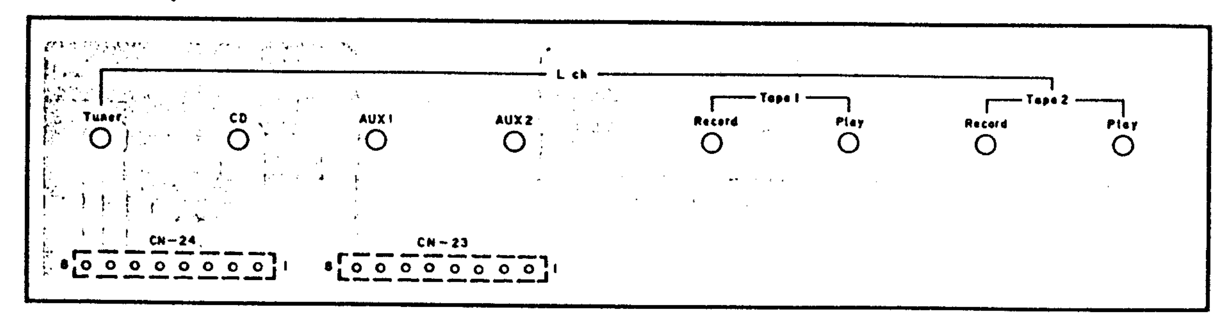


Fig. 5.7

5.8. Pin Jack R P.C.B. Ass'y

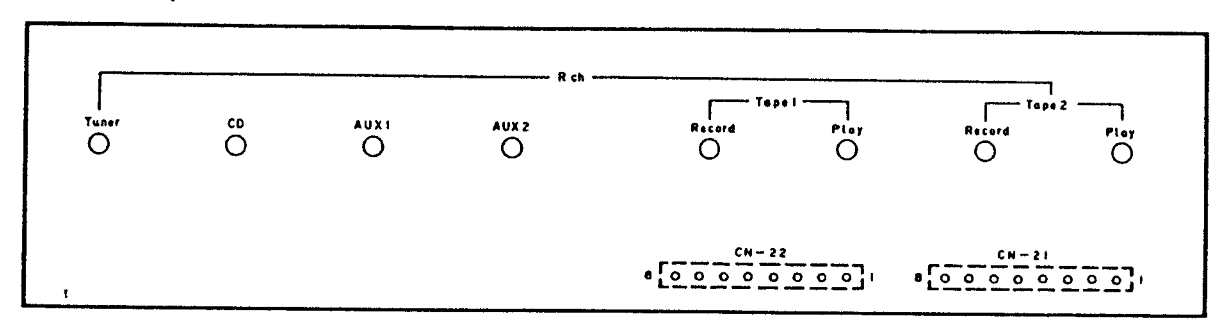


Fig. 5.8

Schematic Ref. No.	Part No.	Description
	BA06325A	Pin Jack L P.C.B. Ass'y
	0B60399B	Pin Jack L P.C.B.
CN21,22	0B81019A	Dip Mate 8P
	0B81374A	2P Pin Jack (4)
	BA06326A	Pin Jack R P.C.B. Ass'y
	0B60400B	Pin Jack R P.C.B.
CN23,24	0B81019A	Dip Mate 8P
	0B81374A	2P Pin Jack (4)
	BA06340A	Function Switch P.C.B. Ass'y
	0B60406B	Function Switch P.C.B.
LED601,609	0B12274A	LED SLR-34MG3 (GRN)
LED602-608	0B12392A	LED SLV-31MC (GRN) (7)
SW601-609	0B70062A	Tact Switch (9)
CN2	0B81043A	9P-S Post
CN3	0B81044A	10P-S Post
CN4	0B81039A	5P-S Post
CN8	0B81038A	4P-S Post
CN9	0B81036A	2P-S Post
	0J05216A	LED House (2)
	0J05217A	Reflector (1)

Schematic Ref. No.	Part No.	Description
	BA06332A	Power Supply P.C.B. Ass'y (CA-7A & CA-7 (Canada, Saudi Arabia & Other))
	BA06333A	Power Supply P.C.B. Ass'y (CA-7 (Australia) & CA-7E (except Germany))
	BA06777A	Power Supply P.C.B. Ass'y (CA-7E (Germany))
	BA06331A	Power Supply P.C.B. Ass'y (CA-70)
	0B60403C	Power Supply P.C.B.
Q401,404 405,411 414,415	0B10060A	TR 2SA970 (BL)
Q402,403 406,412 413,416	0B06142A	TR 2SC2240 (BL)
Q407,408 417,418	0B10198A	TR 2SA1358
Q409,410 419,420	0B10199A	TR 2SC3421
ZD401,402	0B12166A	ZD 9.1V RD9.1JS-T1B3
ZD403,404	0B12206A	ZD 36V RD36JS-T1B1
D401-408	0B12102A	SiD 10DF-2 (8)
D409-416	0B06181A	SiD 1SS53 (8)
R401	0B09305A	RM 100K 1/4W F
R402,403 413,414	0B22630A	RM 604 1/4W F
R404,405 415,416	0B09491A	RM 1K 1/4W F
R406,407 410,411	0B22718A	RM 6.65 1/4W F
R408,409 419,420	0B22567A	RM 100 1/4W F
R412	0B09502A	RM 1M 1/4W F

Schematic Ref. No.	Part No.	Description
R417,418 421,422	0B25484A	RM 26.1 1/4W F
C401,402	0B40425A	CE 8200μ 16V (CA-7A, CA-7 & CA-7E (except Germany))
	0B40455A	CE 8200μ 16V (CA-7E (Germany) & CA-70)
C403,404	0B40426A	CE 3900μ 50V (CA-7A, CA-7 & CA-7E (except Germany))
	0B40456A	CE 3900μ 50V (CA-7E (Germany) & CA-70)
C405-408	0B41786A	CSP 560P 160V
	0B90215A	Fuse Holder (CA-7A, CA-7 (Canada, Saudi Arabia & Other) & CA-70) (4)
	0B90216A	Fuse Holder (CA-7 (Australia) & CA-7E) (4)
	0B81649A	Terminal P-100 (4)
	0B82866B	Audio Ground Code (1)
	0B82893A	Relay DC Code (1)
	0E00741A	M3x12 ⊕ Binding (Nickel) (4)
	0E00972A	Nut Hex. M3 (4)
	0J05289A	Heat Sink A (1)
	0B90239A	Transistor Seat (8)

5.9. Function Switch P.C.B. Ass'y

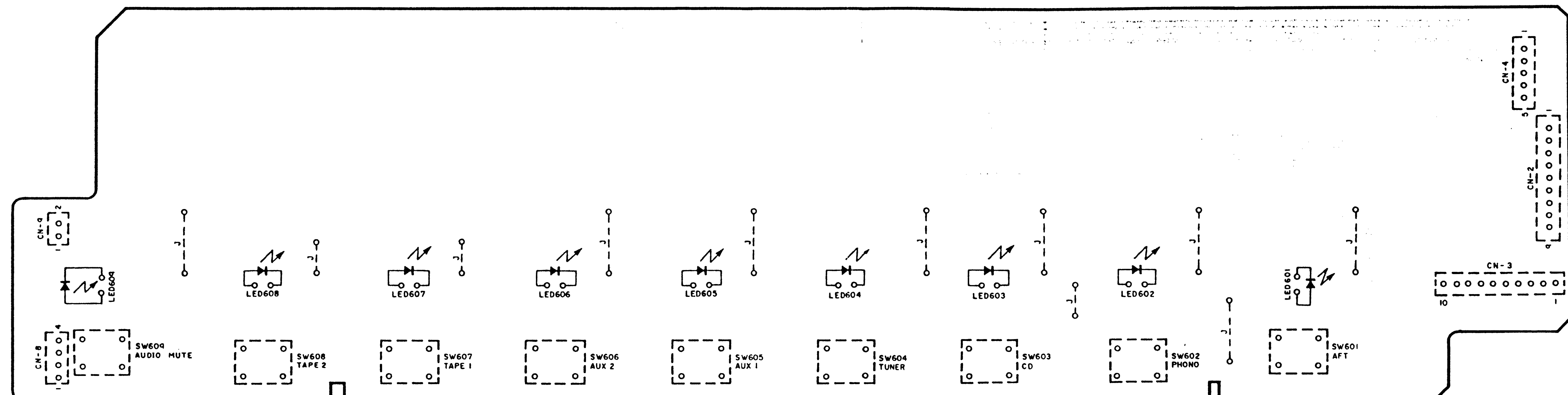


Fig. 5.9

5.10. Power Supply P.C.B. Ass'y

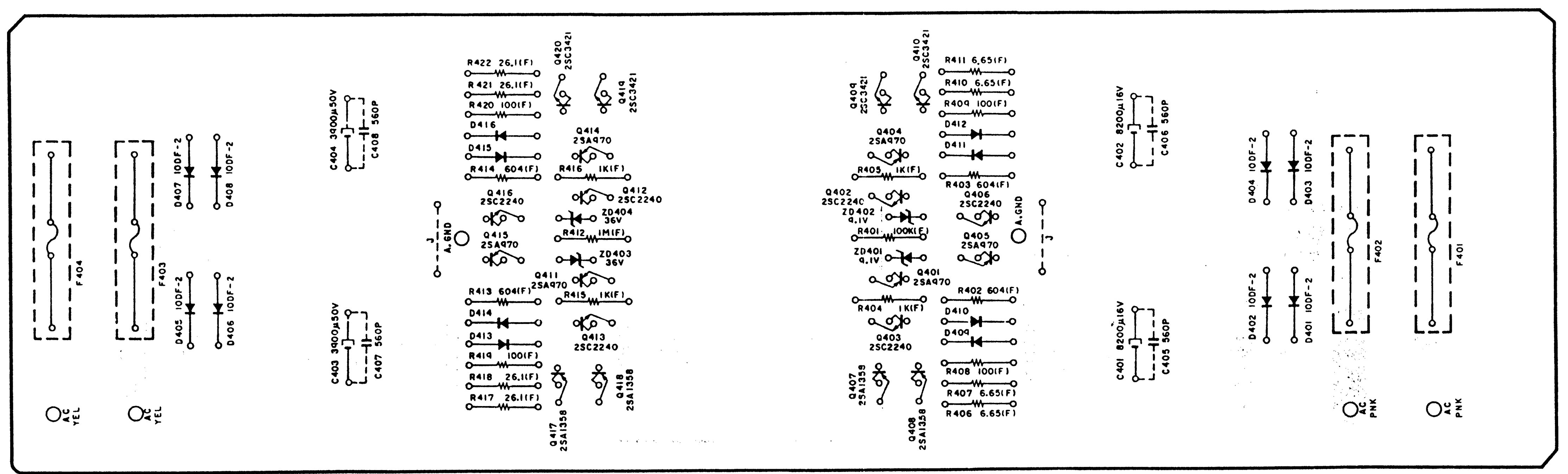


Fig. 5.10

5.11. Amp. L P.C.B. Ass'y

Fig. 5.11

Note: Parts marked with ** are for CA-7 (Germany)).

Schematic Ref. No.	Part No.	Description
	BA06322A	Amp. L P.C.B. Ass'y
	— MC Amp. —	
IC101	0B11254A	IC µPC812
Q101-105, 123	0B10112A	FET 2SK170 (BL) (6)
Q106-110, 122	0B10169A	FET 2SJ74 (BL) (6)
Q111-113, 120,124, 127,167	0B10050A	TR 2SA970 (BL) (7)
Q114-117, 121,125, 126,166	0B06142A	TR 2SC2240 (BL) (8)
Q118	0B10201A	TR 2SC1815L
Q119	0B10200A	TR 2SA1015L
ZD101,102	0B12158A	ZD 7.5V RD7.5JS-T1B1
D101-104	0B06181A	SiD 1SS53 (4)
VR101	0B32104A	Semi VR 500
R102	0B22723A	RM 4.22 1/4W F
R103	0B22722A	RM 3.92 1/4W F
R104	0B22721A	RM 1.24 1/4W F
R105-109, 111-115, 133,135	0B22666A	RM 10 1/4W F (12)
R110,116	0B22661A	RM 402 1/4W F
R117-121	0B22579A	RM 243 1/4W F (5)
R122	0B22645A	RM 499 1/4W F
R123-128, 712	0B22642A	RM 221 1/4W F (7)
R129	0B09491A	RM 1K 1/4W F
R130	0B22739A	RM 523 1/4W F
R131,132	0B22709A	RM 22.1 1/4W F
R134,136	0B22743A	RM 18.7 1/4W F
R137	0B20409A	RK 63.4 2W F
R138	0B09439A	RM 20K 1/4W F
R139,140	0B09502A	RM 1M 1/4W F
R141	0B22696A	RM 392 1/4W F
R142,143	0B22567A	RM 100 1/4W F
R144	0B22711A	RM 17.4K 1/4W F
C101	0B41725A	CSP 1000P 100V J
C102	0B41476A	CM 0.1µ 63V J
C103	0B41543A	CM 1µ 125V
C119	0B41764A	CSP 100P 160V J
	0B70087A	Toggle Switch (1)
	0B81653A	Socket Pin (2)
	— RIAA Eq. Amp. —	
IC102	0B11254A	IC µPC812
Q128	0B10188A	FET 2SK240 (BL)
Q129,130, 136,144	0B06142A	TR 2SC2240 (BL)
Q131,133, 134,135, 143	0B10050A	TR 2SA970 (BL)
Q132,145	0B10199A	TR 2SC3421
Q137	0B10103A	TR 2SC3333
Q138	0B10102A	TR 2SA1320
Q139	0B10142A	TR 2SA1321
Q140	0B10143A	TR 2SC3334
Q141	0B10169A	FET 2SJ74 (BL)
Q142	0B10112A	FET 2SK170 (BL)
Q146	0B10198A	TR 2SA1358
ZD103	0B12168A	ZD 10V RD10JS-T1B2
ZD104,105	0B12205A	ZD 33V RD33JS-T1B3
ZD106,107	0B12185A	ZD 18V RD18JS-T1B1
D105-112	0B06181A	SiD 1SS53 (8)
VR102	0B32117A	Semi VR 200
R145	0B20208A	RK 75 1/2W G (Except CA-7E (Germany))
	0B20401A	RK 220 1/2W (CA-7E (Germany))
R146	0B20344A	RK 51.1K 1/2W G
R147	0B22744A	RM 215 1/4W F
R148,149	0B22569A	RM 953 1/4W F
R150	0B22728A	RM 1.62K 1/4W F
R151	0B22695A	RM 301 1/4W F
R152	0B09446A	RM 33.2K 1/4W F
R153	0B09540A	RM 3.24K 1/4W F
R154	0B22633A	RM 150 1/4W F
R155	0B22630A	RM 604 1/4W F
R156,157	0B09760A	RM 332 1/4W F
R158,160, 171,173	0B22713A	RM 536 1/4W F
R159,161, 170,172	0B09491A	RM 1K 1/4W F
R162	0B20410A	RK 200 1/2W G
R163,164	0B09305A	RM 100K 1/4W F
R165	0B09502A	RM 1M 1/4W F
R166	0B22731A	RM 32.4K 1/4W F
R167	0B22741A	RM 69.8K 1/4W F
R168	0B22729A	RM 10.0K 1/4W F
R169	0B22745A	RM 124K 1/4W F
R174	0B09510A	RM 66.5K 1/4W F
R175	0B22738A	RM 27.4 1/4W F
R705,706	0B22361A	RM 15K 1/4W F
R709	0B09459A	RM 80.6K 1/4W F
C104	0B41765A	CSP 200P 160V J
C105,106	0B41764A	CSP 100P 160V J
C108	0B41776A	CM 0.47µ 125V K
C109	0B41476A	CM 0.1µ 63V J
C110	0B41722A	CSP 7450P 100V F
C111	0B41723A	CSP 0.0263µ 100V F
C112	0B41767A	CSP 0.01µ 160V J
	0B70087A	Toggle Switch (1)
	0B70088A	Toggle Switch (1)
	— Line Amp. —	
IC103	0B11254A	IC µPC812
Q147	0B10188A	FET 2SK240 (BL)
Q148,149, 151,155, 156,159, 163	0B06142A	TR 2SC2240 (BL)
Q150,152, 153,154, 157,158, 162	0B10050A	TR 2SA970 (BL)
Q160	0B10169A	FET 2SJ74 (BL)
Q161	0B10112A	FET 2SK170 (BL)
Q164	0B10199A	TR 2SC3421
Q165	0B10198A	TR 2SA1358
ZD108	0B12168A	ZD 10V RD10JS-T1B2
ZD109,110	0B12184A	ZD 16V RD16JS-T1B3
D113-123	0B06181A	SiD 1SS53 (11)
VR103	0B32104A	Semi VR 500
R176	0B20410A	RK 200 1/2W G
R177,193	0B20411A	RK 1K 1/2W F
R178,179, 199,700	0B09491A	RM 1K 1/4W F
R180	0B22728A	RM 1.62K 1/4W F
R181	0B22695A	RM 301 1/4W F
R182	0B09446A	RM 33.2K 1/4W F
R183	0B09540A	RM 3.24K 1/4W F
R184	0B22630A	RM 604 1/4W F
R185	0B22633A	RM 150 1/4W F
R186	0B20395A	RK 12.4K 1/2W F
R187,188	0B09760A	RM 332 1/4W F
R189,191, 701,702	0B22713A	RM 536 1/4W F
R190,192	0B09829A	RM 3.32K 1/4W F
R194	0B09305A	RM 100K 1/4W F
R195,196	0B09502A	RM 1M 1/4W F
R197	0B22731A	RM 32.4K 1/4W F
R198	0B22742A	RM 226K 1/4W F
R703	0B09510A	RM 66.5K 1/4W F
R704	0B22726A	RM 110 1/4W F
R707,708	0B22361A	RM 15K 1/6W F
R710	0B22660A	RM 30.9K 1/4W F
R711	0B22666A	RM 10.0 1/4W F
C113	0B41764A	CSP 100P 160V J
C114	0B41766A	CSP 4700P 160V J
C115	0B41763A	CSP 10P 160V J
C116,118	0B41476A	CM 0.1µ 63V J
C117	0B41543A	CM 1µ 125V K
RL101	0B90086A	Relay MR62-24S
RL102,103	0B90211A	Relay FBR 22ND24
	— Miscellaneous —	
	0B60396C	Amp L P.C.B.
	0B81630A	Pin Jack T5882 (2)
	0B82863A	AFT Relay L Code (1)
	0B82869B	DC L.H.N Code (1)
	0B82870B	DC L.H.P Code (1)
	0B82873B	DC L.L.N Code (1)
	0B82874B	DC L.L.P Code (1)
	0B82875B	Line L Code (1)
	0B82876B	EQ L Out Code (1)
	0B82880B	AFT L Code (1)
	0B82882A	Mute Relay L Code (1)
	0B82887A	AFT DC L Code (1)
L101,102	0B51246A	Coil 10µH (CA-7E (Germany))
L103	0B51245A	Coil 20µH (CA-7E (Germany))
C190,191	0B41764A	CSP 100P 160V J (CA-7E (Germany))
C192	0B41796A	CSP 56P 160V J (CA-7E (Germany))
C193	0B41795A	CSP 330P 160V J (CA-7E (Germany))
C194	0B41747A	C 39P 100V J (CA-7E (Germany))

Schematic Ref. No.	Part No.	Description
	BA06323A	Amp. R P.C.B. Ass'y
	— MC Amp. —	
IC201	0B11254A	IC μPC812
Q201-205, 223	0B10112A	FET 2SK170 (BL) (6)
Q206-210, 222	0B10169A	FET 2SJ74 (BL) (6)
Q211-213, 220,224, 227,267	0B10050A	TR 2SA970 (BL) (7)
Q214-217, 221,225, 226,266	0B06142A	TR 2SC2240 (BL) (8)
Q218	0B10201A	TR 2SC1815L
Q219	0B10200A	TR 2SA1015L
ZD201,202	0B12158A	ZD 7.5V RD7.5JS-T1B1
D201-204	0B06181A	SiD 1SS53 (4)
VR201	0B32104A	Semi VR 500
R202	0B22723A	RM 4.22 1/4W F
R203	0B22722A	RM 3.92 1/4W F
R204	0B22721A	RM 1.24 1/4W F
R205-209, 211-215, 233,235	0B22666A	RM 10 1/4W F (12)
R210,216	0B22661A	RM 402 1/4W F
R217-221	0B22579A	RM 243 1/4W F (5)
R222	0B22645A	RM 499 1/4W F
R223-228, 712	0B22642A	RM 221 1/4W F (7)
R229	0B09491A	RM 1K 1/4W F
R230	0B22739A	RM 523 1/4W F
R231,232	0B22709A	RM 22.1 1/4W F
R234,236	0B22743A	RM 18.7 1/4W F
R237	0B20409A	RK 63.4 2W F
R238	0B09439A	RM 20K 1/4W F
R239,240	0B09502A	RM 1M 1/4W F
R241	0B22696A	RM 392 1/4W F
R242,243	0B22567A	RM 100 1/4W F
R244	0B22711A	RM 17.4K 1/4W F
C201	0B41725A	CSP 1000P 100V J
C202	0B41476A	CM 0.1μ 63V J
C203	0B41543A	CM 1μ 125V
C219	0B41764A	CSP 100P 160V J
	0B70087A	Toggle Switch (1)
	0B81653A	Socket Pin (2)
	— RIAA Eq. Amp. —	
IC202	0B11254A	IC μPC812
Q228	0B10188A	FET 2SK240 (BL)
Q229,230, 236,244	0B06142A	TR 2SC2240 (BL)
Q231,233, 234,235, 243	0B10050A	TR 2SA970 (BL)
Q232,245	0B10199A	TR 2SC3421
Q237	0B10103A	TR 2SC3333
Q238	0B10102A	TR 2SA1320
Q239	0B10142A	TR 2SA1321
Q240	0B10143A	TR 2SC3334
Q241	0B10169A	FET 2SJ74 (BL)
Q242	0B10112A	FET 2SK170 (BL)
Q246	0B10198A	TR 2SA1358
ZD203	0B12168A	ZD 10V RD10JS-T1B2
ZD204,205	0B12205A	ZD 33V RD33JS-T1B3
ZD206,207	0B12185A	ZD 18V RD18JS-T1B1
D205-212	0B06181A	SiD 1SS53 (8)
VR202	0B32117A	Semi VR 200
R245	0B20208A	RK 75 1/2W G (Except CA-7E (Germany))
	0B20401A	RK 220 1/2W (CA-7E (Germany))
R246	0B20344A	RK 51.1K 1/2W G
R247	0B22744A	RM 215 1/4W F
R248,249	0B22569A	RM 953 1/4W F
R250	0B22728A	RM 1.62K 1/4W F
R251	0B22695A	RM 301 1/4W F
R252	0B09446A	RM 33.2K 1/4W F
R253	0B09540A	RM 3.24K 1/4W F
R254	0B22633A	RM 150 1/4W F
R255	0B22630A	RM 604 1/4W F
R256,257	0B09760A	RM 332 1/4W F
R258,260, 271,273	0B22713A	RM 536 1/4W F
R259,261, 270,272	0B09491A	RM 1K 1/4W F
R262	0B20410A	RK 200 1/2W G
R263,264	0B09305A	RM 100K 1/4W F
R265	0B09502A	RM 1M 1/4W F
R266	0B22731A	RM 32.4K 1/4W F
R267	0B22741A	RM 69.8K 1/4W F
R268	0B22729A	RM 10.0K 1/4W F
R269	0B22745A	RM 124K 1/4W F
R274	0B09510A	RM 66.5K 1/4W F
R275	0B22738A	RM 27.4 1/4W F
R805,806	0B22361A	RM 15K 1/4W F
R809	0B09459A	RM 80.6K 1/4W F
C204	0B41765A	CSP 200P 160V J
C205,206	0B41764A	CSP 100P 160V J
C208	0B41776A	CM 0.47μ 125V K
C209	0B41476A	CM 0.1μ 63V J
C210	0B41722A	CSP 7450P 100V F
C211	0B41723A	CSP 0.0263μ 100V F
C212	0B41767A	CSP 0.01μ 160V J
	0B70087A	Toggle Switch (1)
	0B70088A	Toggle Switch (1)
	— Line Amp. —	
IC203	0B11254A	IC μPC812
Q247	0B10188A	FET 2SK240 (BL)
Q248,249, 251,255, 256,259, 263	0B06142A	TR 2SC2240 (BL)
Q250,252, 253,254, 257,258, 262	0B10050A	TR 2SA970 (BL)
Q260	0B10169A	FET 2SJ74 (BL)
Q261	0B10112A	FET 2SK170 (BL)
Q264	0B10199A	TR 2SC3421
Q265	0B10198A	TR 2SA1358
ZD208	0B12168A	ZD 10V RD10JS-T1B2
ZD209,210	0B12184A	ZD 16V RD16JS-T1B3
D213-223	0B06181A	SiD 1SS53 (11)
VR203	0B32104A	Semi VR 500
R276	0B20410A	RK 200 1/2W G
R277,293	0B20411A	RK 1K 1/2W F
R278,279, 299,800	0B09491A	RM 1K 1/4W F
R280	0B22728A	RM 1.62K 1/4W F
R281	0B22695A	RM 301 1/4W F
R282	0B09446A	RM 33.2K 1/4W F
R283	0B09540A	RM 3.24K 1/4W F
R284	0B22630A	RM 604 1/4W F
R285	0B22633A	RM 150 1/4W F
R286	0B20395A	RK 12.4K 1/2W F
R287,288	0B09760A	RM 332 1/4W F
R289,291, 801,802	0B22713A	RM 536 1/4W F
R290,292	0B09829A	RM 3.32K 1/4W F
R294	0B09305A	RM 100K 1/4W F
R295,296	0B09502A	RM 1M 1/4W F
R297	0B22731A	RM 32.4K 1/4W F
R298	0B22742A	RM 226K 1/4W F
R803	0B09510A	RM 66.5K 1/4W F
R804	0B22726A	RM 110 1/4W F
R807,808	0B22361A	RM 15K 1/6W F
R810	0B22660A	RM 30.9K 1/4W F
R811	0B22666A	RM 10.0 1/4W F
C213	0B41764A	CSP 100P 160V J
C214	0B41766A	CSP 4700P 160V J
C215	0B41763A	CSP 10P 160V J
C216,218	0B41476A	CM 0.1μ 63V J
C217	0B41543A	CM 1μ 125V K
RL201	0B90086A	Relay MR62-24S
RL202,203	0B90211A	Relay FBR 22ND24
	— Miscellaneous —	
	0B60397C	Amp. R P.C.B.
	0B81630A	Pin Jack T5882 (2)
	0B82864A	AFT Relay R Code (1)
	0B82867B	DC R.H.N Code (1)
	0B82868B	DC R.H.P Code (1)
	0B82871B	DC R.L.N Code (1)
	0B82872B	DC R.L.P Code (1)
	0B82877B	Line R Code (1)
	0B82878B	EQ R Out Code (1)
	0B82879B	AFT R Code (1)
	0B82883A	Mute Relay R Code (1)
	0B82888A	AFT DC R Code (1)
L201,202	0B51246A	Coil 10μH (CA-7E (Germany))
L203	0B51245A	Coil 20μH (CA-7E (Germany))
C290,291	0B41764A	CSP 100P 160V J (CA-7E (Germany))
C292	0B41796A	CSP 56P 160V J (CA-7E (Germany))
C293	0B41795A	CSP 330P 160V J (CA-7E (Germany))
C294	0B41747A	C 39P 100V J (CA-7E (Germany))

5.12. Amp. R P.C.B. Ass'y

Fig. 5.12

Note: Parts marked with ** are for CA-7 (Germany)).

5.13. Logic P.C.B. Ass'y

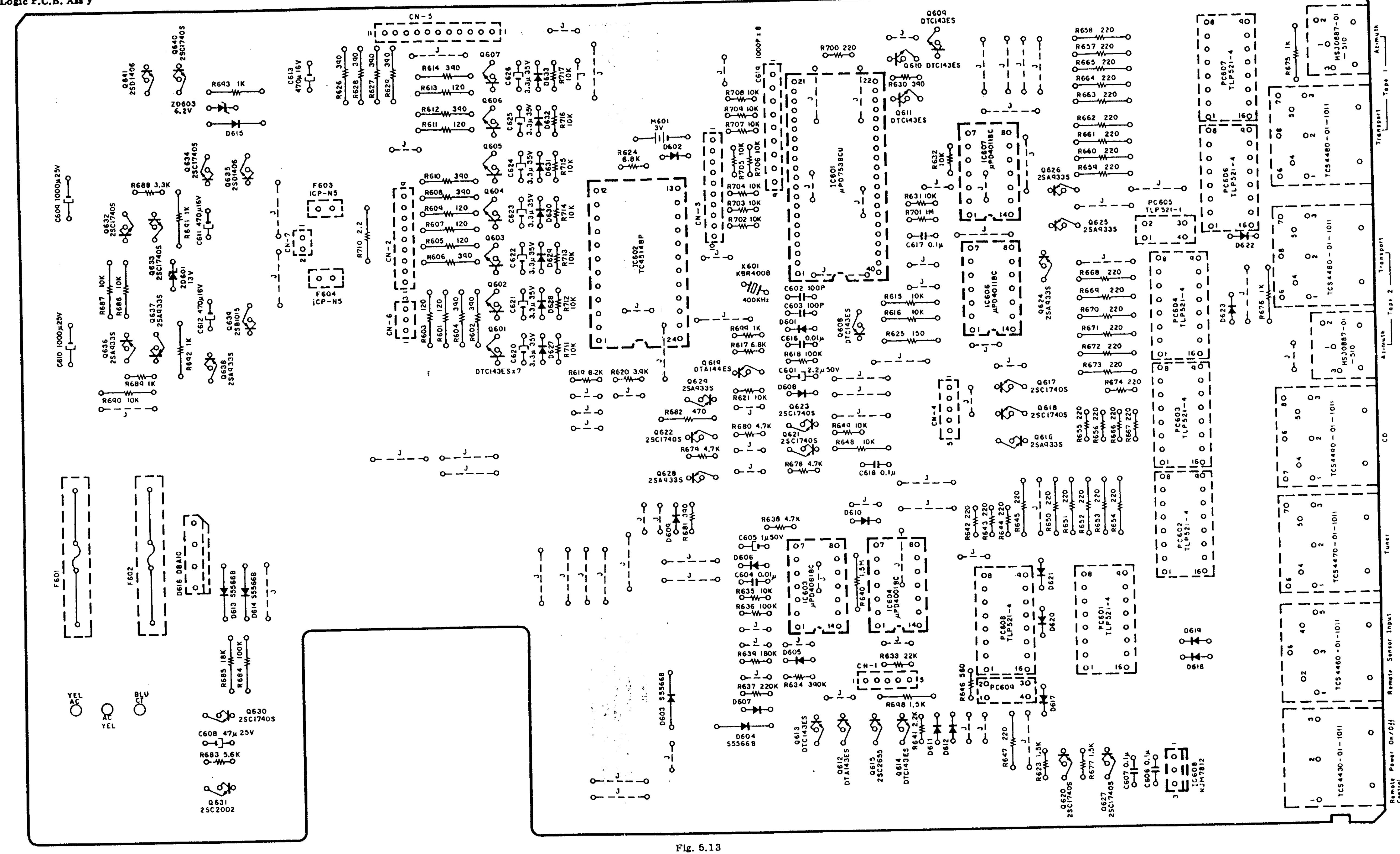


Fig. 5.13

Schematic Ref. No.	Part No.	Description
	BA06337A	Logic P.C.B. Ass'y (CA-7A & CA-7 (Canada, Saudi Arabia & Other))
	BA06338A	Logic P.C.B. Ass'y (CA-7 (Australia) & CA-7E)
	BA06336A	Logic P.C.B. Ass'y (CA-70)
	0B60405C	Logic P.C.B.
IC601	0B11249A	IC μPD7538CU
IC602	0B06264A	IC TC4514BP
IC603	0B06219A	IC μPD4081BC
IC604	0B06143A	IC μPD4001BC
IC606,607	0B06178A	IC μPD4011BC
IC608	0B06380A	IC NJM7812
Q601-611 613,614	0B10070A	TR DTC143ES (13)
Q612	0B10060A	TR DTA143ES
Q615	0B06429A	TR 2SC2655 (Y)
Q616,624 625,626 628,629 636,637 638	0B10026A	TR 2SA933S (Q,R,S)
Q617,618 620,621 622,623 627,630 632,633 634,640	0B10030A	TR 2SC1740S (Q,R,S,E)
Q619	0B10053A	TR DTA144ES
Q631	0B06322A	TR 2SC2002 (K,L)
Q635,641	0B06452A	TR 2SD1406 (Y)
Q639	0B06451A	TR 2SB1015 (Y)
ZD601,602	0B12318A	ZD 13V MTZ13C
ZD603	0B12295A	ZD 6.2V MTZ6.2C
D601,602 605-612 617-623 627-633	0B06398A	SiD 1SS176 (24)
D603,604 613,614	0B12362A	SiD S5566B
D615	0B06181A	SiD 1SS53
D616	0B06282A	Diode Bridge DBA10
R601,603 605,607 609,611 613	0B09797A	RK 120 1/4W J
R602,604 606,608 610,612 614,626 627,628 629	0B05691A	RK 390 1/4W J
R615,616 648,686 687,690	0B01888A	RK 10K 1/4W J
R617,624	0B09697A	RK 6.8K 1/6W J
R618,636	0B09725A	RK 100K 1/6W J
R619	0B09699A	RK 8.2K 1/6W J
R620	0B09691A	RK 3.9K 1/6W J
R621,631 635,649 702-709 711-717	0B09701A	RK 10K 1/6W J (19)
R623,677	0B09681A	RK 1.5K 1/6W J
R625	0B05795A	RK 150 1/4W J
R630,681	0B09667A	RK 390 1/6W J
R633	0B09709A	RK 22K 1/6W J
R634	0B09739A	RK 390K 1/6W J
R637	0B09733A	RK 220K 1/6W J
R638,678 679,680	0B09693A	RK 4.7K 1/6W J
R639	0B09731A	RK 180K 1/6W J
R640	0B09380A	RK 1.5M 1/4W J
R641	0B09685A	RK 2.2K 1/6W J
R642,643 644,655 656,666 667,674 700	0B09661A	RK 220 1/6W J
R645,647 650-654 657-665 668-673	0B01933A	RK 220 1/4W J (22)
R646	0B09671A	RK 560 1/6W J
R675,676 691,692 693	0B01857A	RK 1K 1/4W J
R682	0B05576A	RK 470 1/4W J
R683	0B09695A	RK 5.6K 1/6W J
R684	0B01889A	RK 100K 1/4W J
R685	0B05560A	RK 18K 1/4W J
R688	0B09689A	RK 3.3K 1/6W J
R689,699	0B09677A	RK 1K 1/6W J
R698	0B05698A	RK 1.5K 1/4W J
R701	0B09749A	RK 1M 1/6W J
R710	0B09925A	RK 2.2 1/4W J
C601	0B09372A	CE 2.2μ 50V
C602,603	0B09282A	CC 100P 50V K
C604,616	0B05681A	CM 0.01μ 50V J
C605	0B01405A	CE 1μ 50V
C606,607 617,618	0B41298A	CMM 0.1μ 50V J
C608	0B01409A	CE 47μ 25V
C609,610	0B40424A	CE 1000μ 25V
C611,612 613	0B40423A	CE 470μ 16V
C619	0B42007A	C-Network 1000Px8
C620-626	0B40169A	CE 3.3μ 35V (7)
PC601,602 603,604 606,607 608	0B10186A	Photocoupler TLP521-4 GB
PC605,609	0B10183A	Photocoupler TLP521-1 GB
X601	0B02390A	Crystal 400kHz
F603,604	0B11248A	IC Protector ICP-N5
CN1	0B82780A	4P/5P-H Connector
CN2	0B82781A	9P-H Connector
CN3	0B82782A	10P-H Connector
CN4	0B82783A	5P-H Connector
CN5	0B82784B	11P-H Connector
CN6	0B82785B	3P-H Connector
CN7	0B82786A	2P-H Connector
	0B90089A	Fuse Holder (CA-7A, CA-7 (Canada, Saudi Arabia & Other) & CA-70) (2)
	0B90090A	Fuse Holder (CA-7 (Australia) & CA-7E) (2)
	0B81376A	Terminal P-104 (4)
	0B81610A	3P DIN Socket (1)
	0B81611A	6P DIN Socket (1)
	0B81612A	7P DIN Socket (1)
	0B81613A	8P DIN Socket A (2)
	0B81614A	8P DIN Socket B (1)
	0B81615A	Stereo Mini Jack (2)
	0J05250A	DIN Bracket (1)

Schematic Ref. No.	Part No.	Description
	BA06324A	Input Selector P.C.B. Ass'y
	— AFT —	
Q101,104 201,204	0B06142A	TR 2SC2240 (BL)
Q102,105 202,205	0B10050A	TR 2SA970 (BL)
Q103,106 203,206	0B10112A	FET 2SK170 (BL)
D101,102 103,104 201,202 203,204	0B06181A	SiD 1SS53
VR301	0B30071A	Master Volume
R101,106 112,201 206,212	0B09774A	RM 1.13K 1/4W F
R102,108 202,208	0B22695A	RM 301 1/4W F
R103,109 203,209	0B22734A	RM 28.7K 1/4W F
R104,110 204,210	0B22567A	RM 100 1/4W F
R105,111 205,211	0B09491A	RM 1K 1/4W F
R107,113 207,213	0B22736A	RM 35.7K 1/4W F
R114,214	0B26027A	RM*845 1/8W F
R115,215	0B26035A	RM*909 1/8W F
R116,216	0B26036A	RM*976 1/8W F
R117,118 129,138 147,156 165,174 217,218 229,238 247,256 265,274	0B26024A	RM*1.05K 1/8W F
R119,219	0B26037A	RM*1.21K 1/8W F
R120,220	0B26038A	RM*1.24K 1/8W F
R121,221	0B26014A	RM*1.30K 1/8W F
R122,128 137,146 155,164 173,222 228,237 246,255 264,273	0B26039A	RM*1.43K 1/8W F
R123,223	0B26043A	RM*40.2K 1/8W F
R124,133 142,151 160,169 224,233 242,251 260,269	0B26042A	RM*13.0K 1/8W F
R125,134 143,152 161,170 225,234 243,252 261,270	0B26041A	RM*5.76K 1/8W F
R126,135 144,153 162,171 226,235 244,253 262,271	0B26012A	RM*3.57K 1/8W F
R127,136 145,154 163,172 227,236 245,254 263,272	0B26040A	RM*2.21K 1/8W F
R130,139 148,157 166,175 230,239 248,257 266,275	0B26034A	RM*619 1/8W F
R131,140 149,158 167,176 231,240 249,258 267,276	0B26033A	RM*392 1/8W F

Schematic Ref. No.	Part No.	Description
R132,141 150,159 168,177 232,241 250,259 268,277	0B26032A	RM*200 1/8W F
R178,179 180,181 278,279 280,281	0B26009A	RM*100K 1/8W F
C101,201	0B41770A	CP 0.018μ 50V J
C102,202	0B41769A	CP 0.01μ 50V J
C103,203	0B41543A	CM 1μ 125V K
C104,204	0B41771A	CP 0.1μ 50V J
C105,205	0B41726A	CM 10μ 100V K
C106,206	0B41764A	CSP 100P 160V J
SW301,302 303,304	0B70089A	Rotary Switch
	— Monitor —	
Q301-319	0B14170A	TR* 2SC2713 (19)
Q303	0B10112A	FET 2SK170 (BL)
Q304	0B10169A	FET 2SJ74 (BL)
ZD301,302	0B12195A	ZD 24V RD24JS-T1B2
D105-120 205-220 301-304	0B13064A	SiD*MA221 (36)
R301,303 305,307 309,311 313,315 317,319 321,323 325,327 329,331 333,339 344	0B23113A	RK*47K 1/8W J
R302,304 306,308 310,312 314,316 318,320 322,324 326,328 330,332 334,340 341	0B23073A	RK*1K 1/8W J
R335,336	0B23097A	RK*10K 1/8W J
R337,338	0B25053A	RM 33.2 1/4W F
R342,343	0B23101A	RK*15K 1/8W J
C301,302	0B41772A	CSP 1000P 160V J
PC301,302	0B10186A	Photocoupler TLP521-4 GB
PC303	0B10184A	Photocoupler TLP521-2 GB
RL101-116 201-216	0B90211A	Relay FBR22ND24 (32)
	— Miscellaneous —	
	0B60398C	Input Selector P.C.B.
CN5	0B81034A	11P-T Post (White)
CN11	0B81033A	10P-T Post
CN12	0B81027A	4P-T Post (White)
CN13	0B81026A	3P-T Post (White)
CN14,15	0B81025A	2P-T Post (White)
CN16,17 18	0B81223A	2P-T Post (White)
CN19,20 25,26 27,28	0B81654A	2P-T Post
CN21,22 23,24	0B81019A	Dip Mapte 8P WH8D-1
	0B82884A	Line Input Code (8)
	0B82885A	Relay Ground Code (1)
	BA06688A	Line Filter P.C.B. Ass'y (CA-7E (Germany))
	0B60451A	Line Filter P.C.B.
	0B51244A	Line Filter LF-4A (1)
	0B90019A	Insu-Lock SKB-80(1)
	0J04703A	Collar Bushing TB-300 (2)
	0J05008A	Collar Bushing TA-310 10 (2)

Fig. 5.14

6. SCHEMATIC DIAGRAMS

6.1. IC Block Diagrams

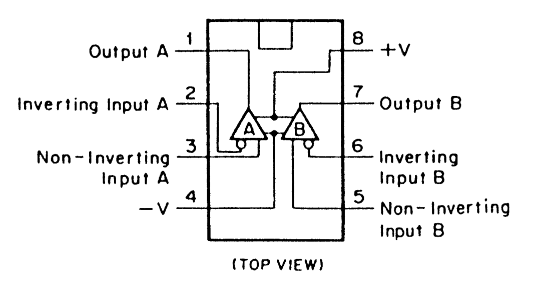


Fig. 6.1.1 Operational Amp. IC μPC812

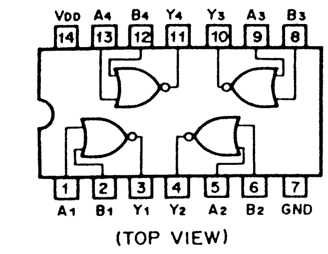


Fig. 6.1.2 NOR Gate C-MOS IC μPD4001BC

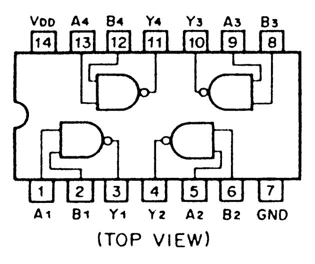


Fig. 6.1.3 NAND Gate C-MOS IC μPD4011BC

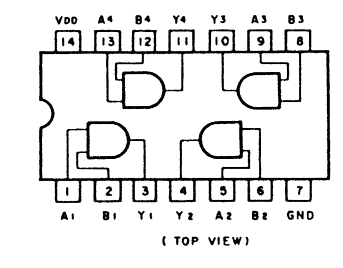


Fig. 6.1.4 AND Gate C-MOS IC μPD4081BC

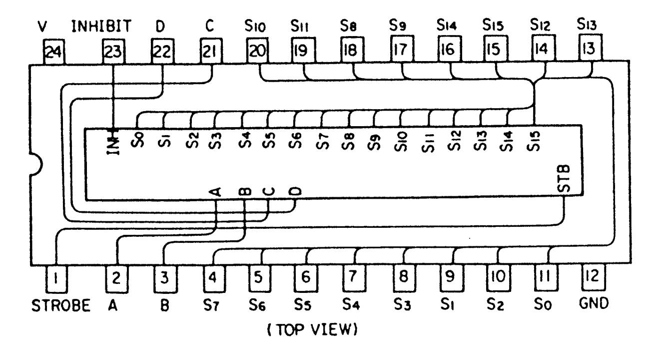
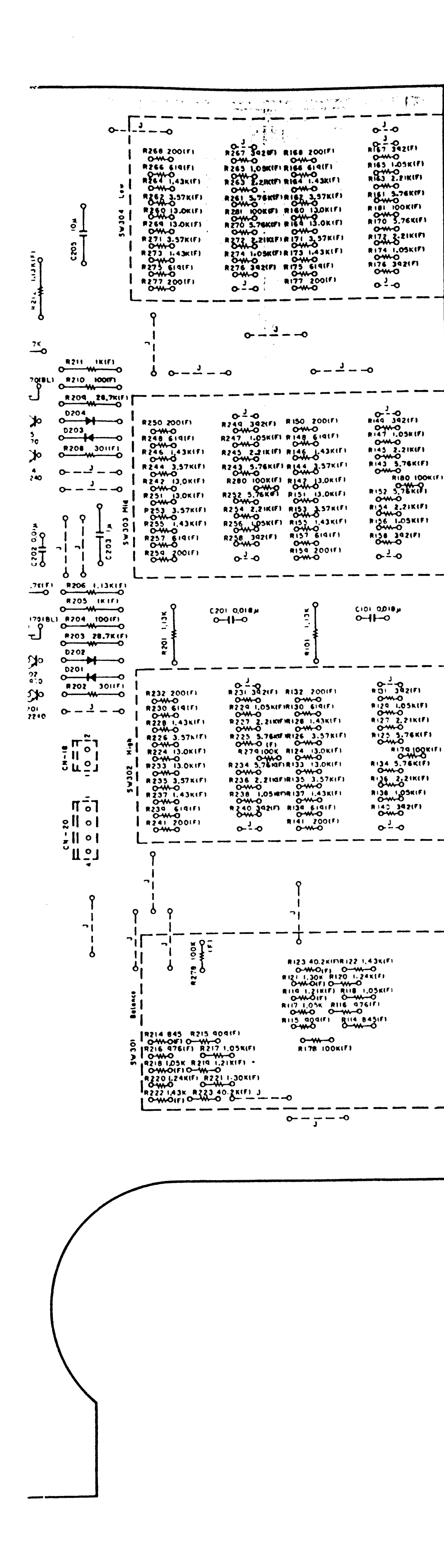


Fig. 6.1.5 4-to-16 Line Decoder IC TC4514BP



6. SCHEMATIC DIAGRAMS

6.1. IC Block Diagrams

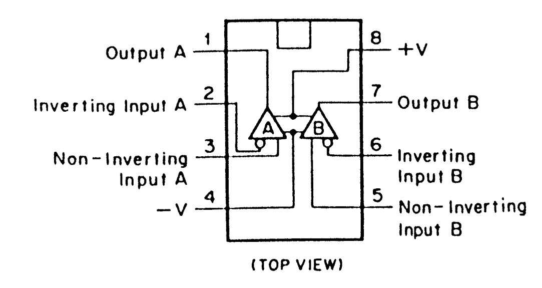


Fig. 6.1.1 Operational Amp. IC μPC812

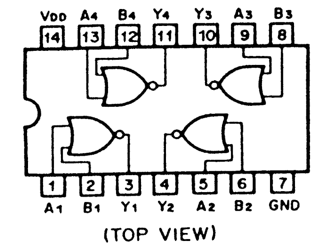


Fig. 6.1.2 NOR Gate C-MOS IC μPD4001BC

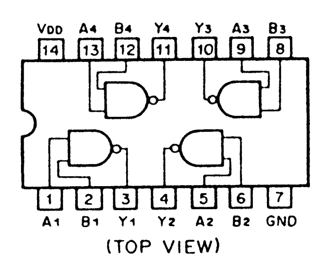


Fig. 6.1.3 NAND Gate C-MOS IC μPD4011BC

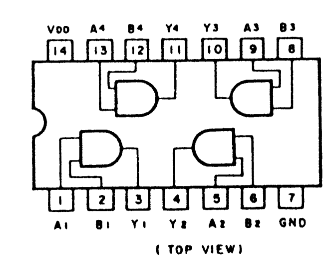


Fig. 6.1.4 AND Gate C-MOS IC μPD4081BC

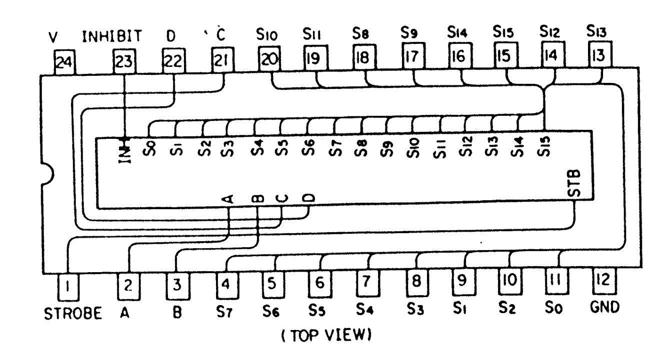
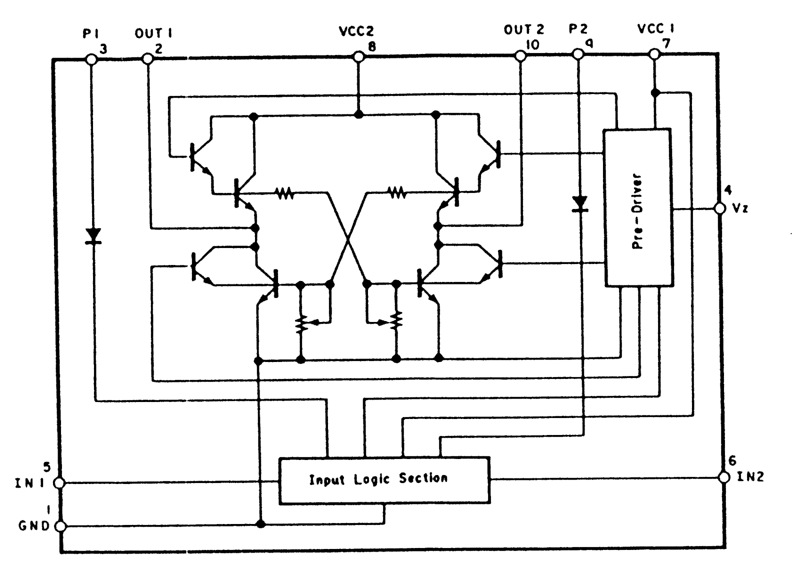


Fig. 6.1.5 4-to-16 Line Decoder IC TC4514BP



INPUT IN1	IN2	OUTPUT OUT1	OUT2	OPERATION
0	0	0	0	Braking
1	0	1	0	Forward (Reverse)
0	1	0	1	Reverse (Forward)
1	1	0	0	Braking

Fig. 6.1.6 Motor Control IC LB1645N

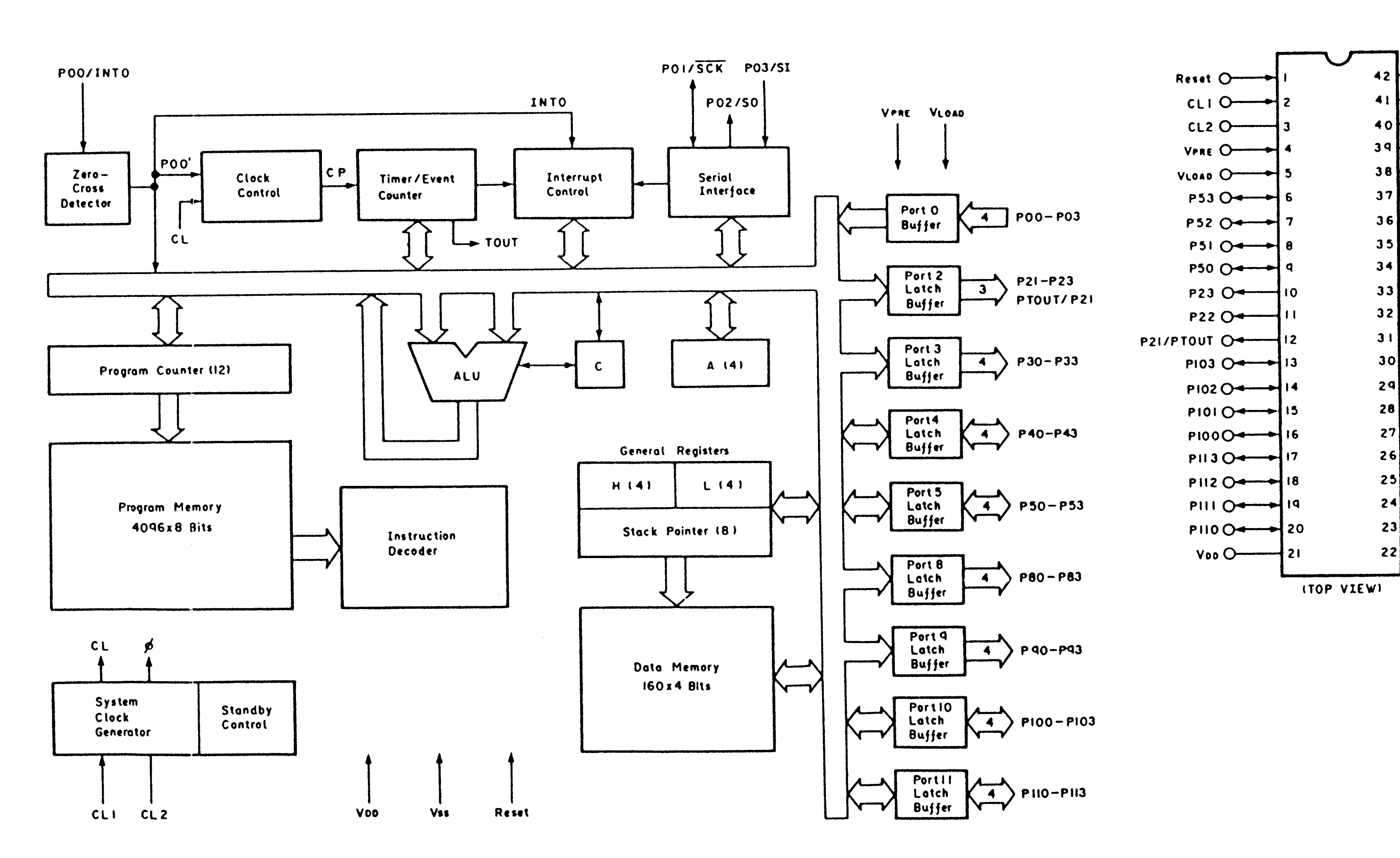


Fig. 6.1.7 Micro-processor μPD7538CU

6.2. Schematic Diagrams

6.2.1. Amplifier Section

AMP L P.C.B.

PHONO (Lch)

MC

MM

INPUT SELECTOR P.C.B.

PIN JACK L P.C.B.

PIN JACK R P.C.B.

RECORD OUT SELECTOR P.C.B.

AMP R P.C.B.

PHONO (Rch)

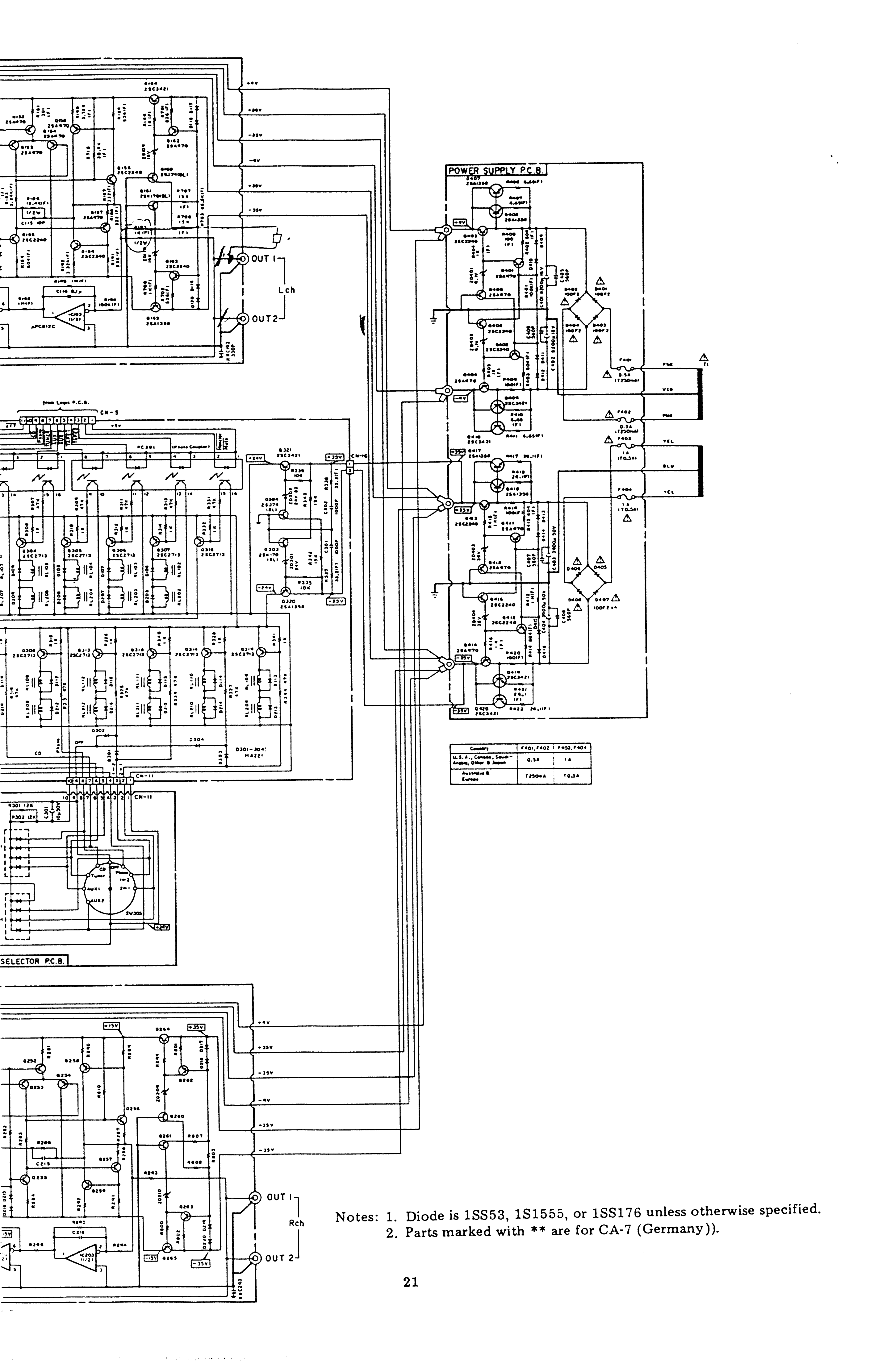
OUT 1

OUT 2

Lch

Rch

Fig. 6.2.1



Country	F401, F402	F403, F404
U.S.A., Canada, Saudi-Arabia, Other & Japan	0.5A	1A
Australia & Europe	T250mA	T0.5A

Notes: 1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
2. Parts marked with ** are for CA-7 (Germany)).

6.2.2. Control Section

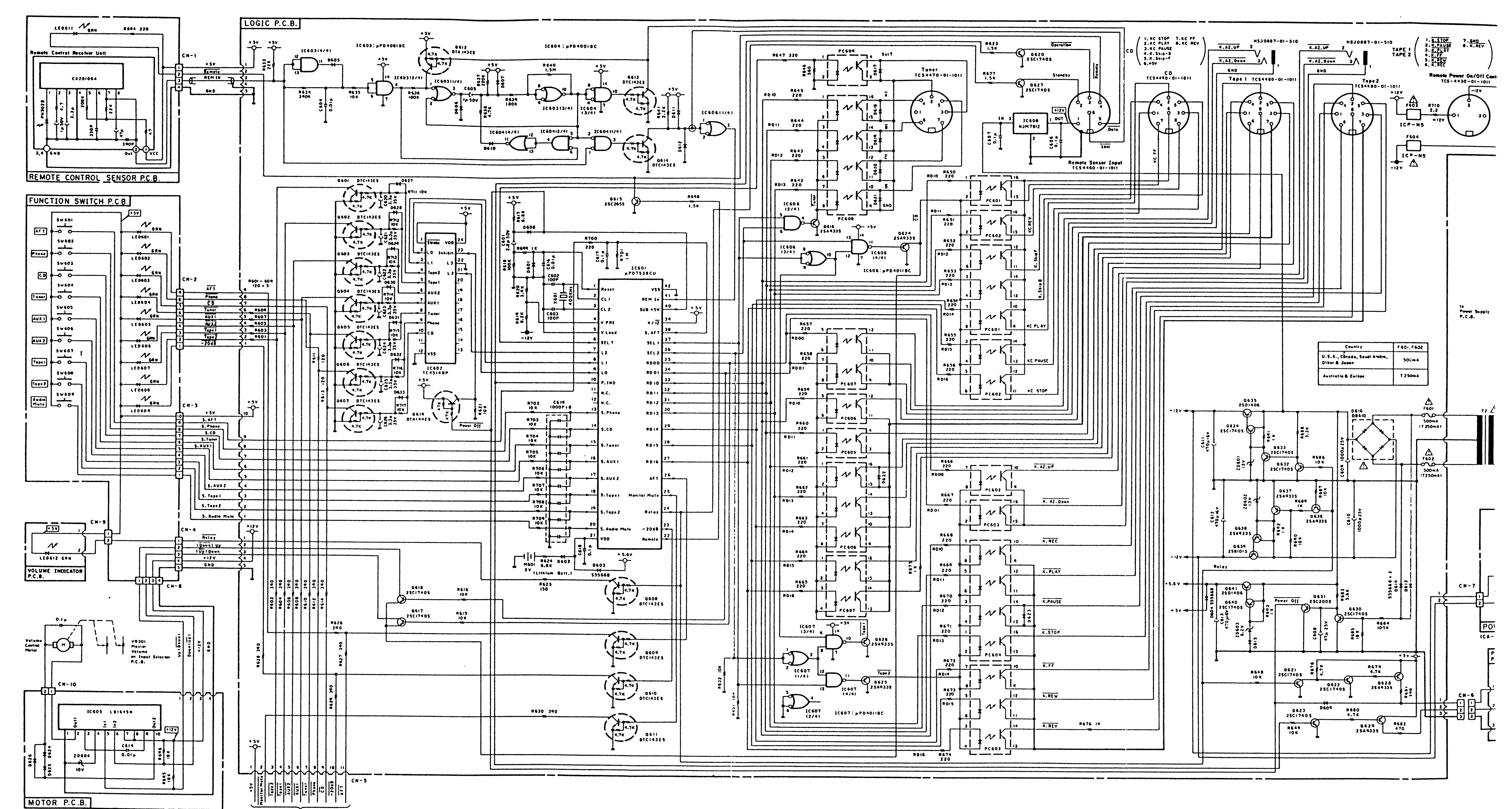


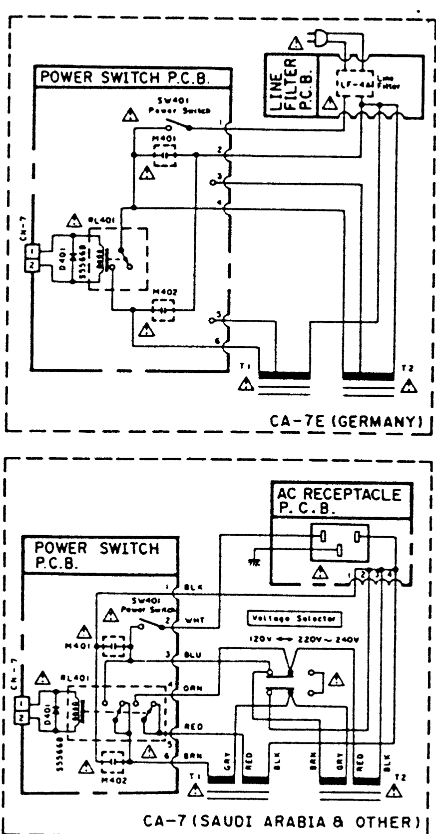
Fig. 6.2.2

Note: Diode is 1SS53, 1S1

POWER SWITCH P.C.B.
(CA-7A)

POWER INDICATOR P.C.B.

AC RECEPTACLE P.C.B.
POWER SWITCH P.C.B.
CA-7E (EXCEPT UK)



AC RECEPTACLE P.C.B.
POWER SWITCH P.C.B.
CA-7 (AUSTRALIA) & CA-7E (UK)

POWER SWITCH P.C.B.
CA-70 & CA-7 (CANADA)

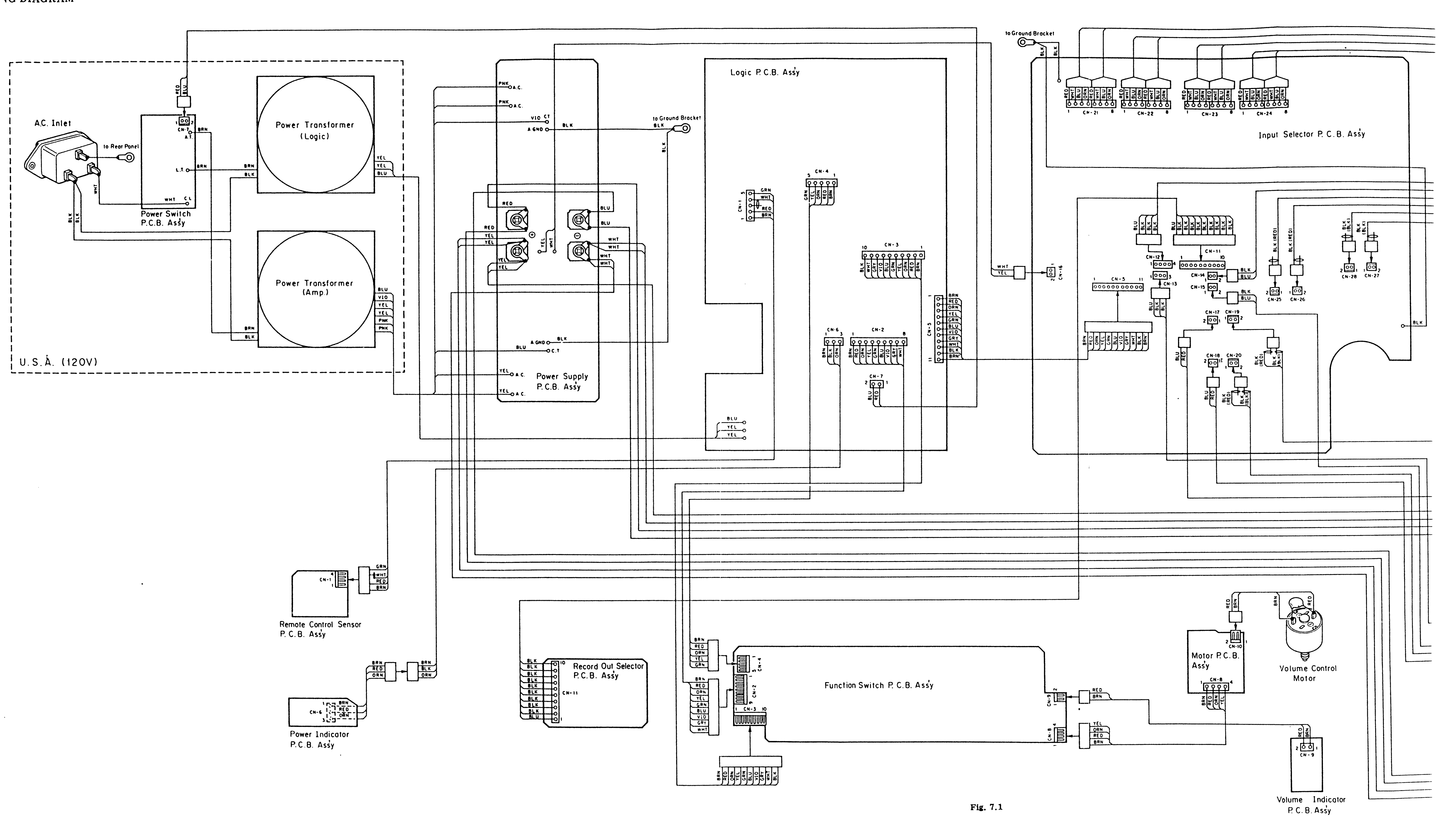
WARNING:

Parts marked with the symbol ⚠ have critical chara
teristics.
Use ONLY replacement parts recommended by t
manufacturer.
It is recommended that the unit be operated from
suitable DC supply or batteries during initial check-o
procedures.

CAUTION:

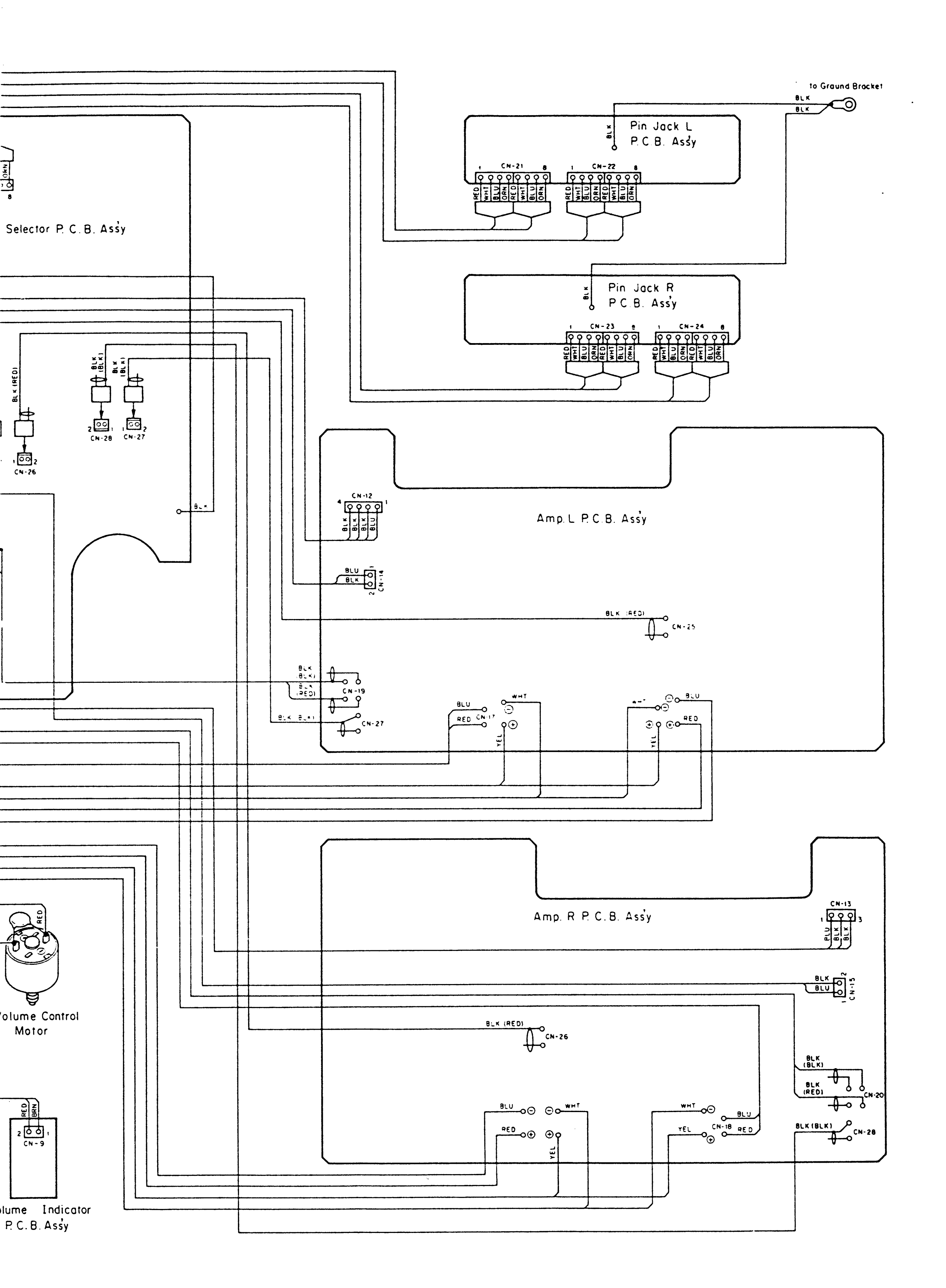
Before returning the unit to the customer, make sure y
make either (1) a leakage current check or (2) a line
chassis resistance check. If the leakage current exceeds 0
milliamp, or if the resistance from chassis to either side
the power cord is less than 240 k ohms, the unit is defe
tive.
WARNING — DO NOT return the unit to the custom
until the problem is located and corrected.

iode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.

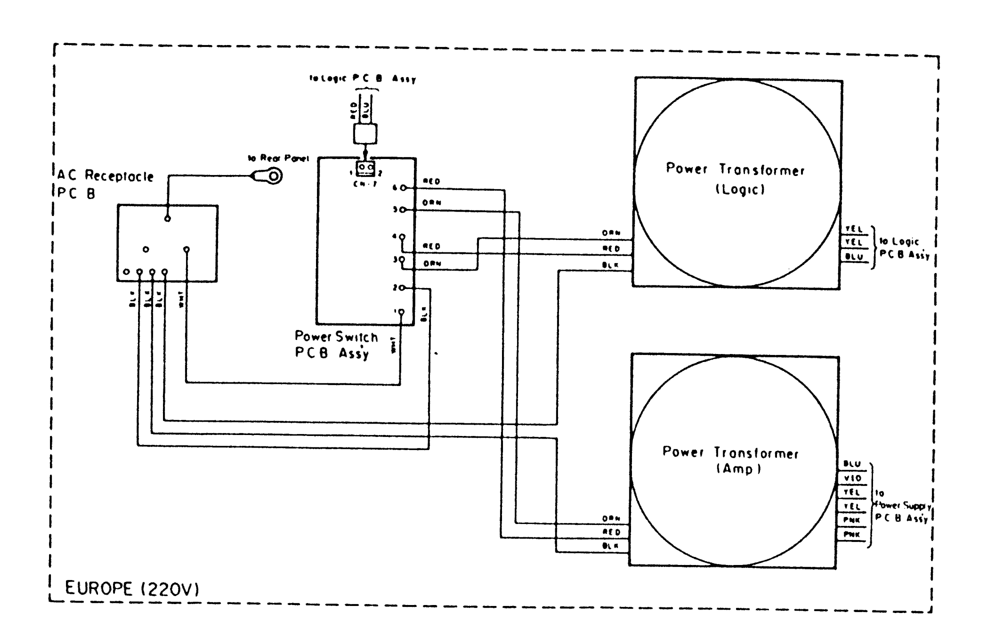


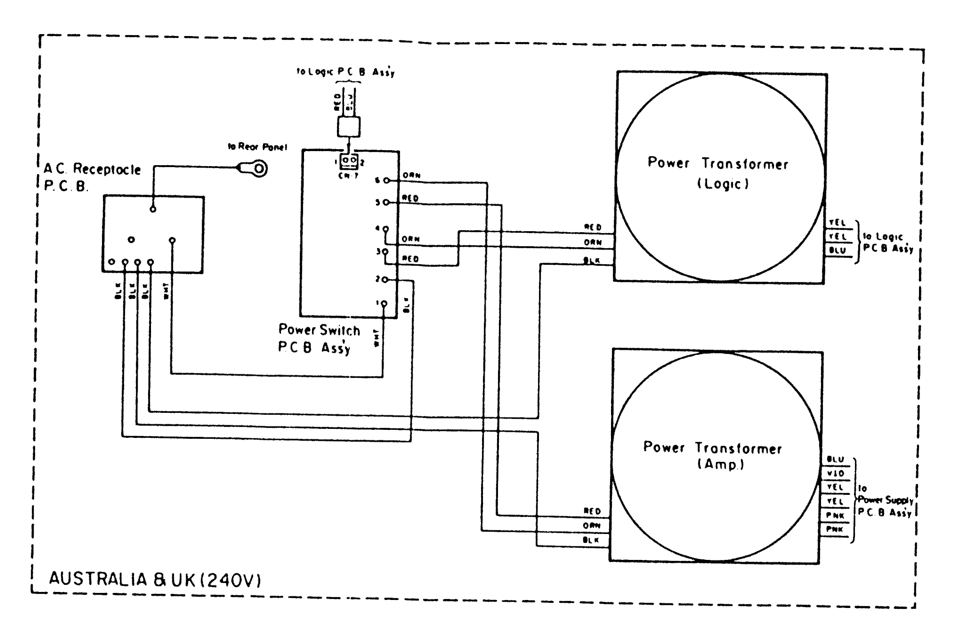
A.C. Inlet
to Rear Panel
Power Switch P.C.B. Ass'y
Power Transformer (Logic)
Power Transformer (Amp.)
U.S.A. (120V)
Power Supply P.C.B. Ass'y
to Ground Bracket
Logic P.C.B. Ass'y
Input Selector P.C.B. Ass'y
Remote Control Sensor P.C.B. Ass'y
Power Indicator P.C.B. Ass'y
Record Out Selector P.C.B. Ass'y
Function Switch P.C.B. Ass'y
Motor P.C.B. Ass'y
Volume Control Motor
Volume Indicator P.C.B. Ass'y

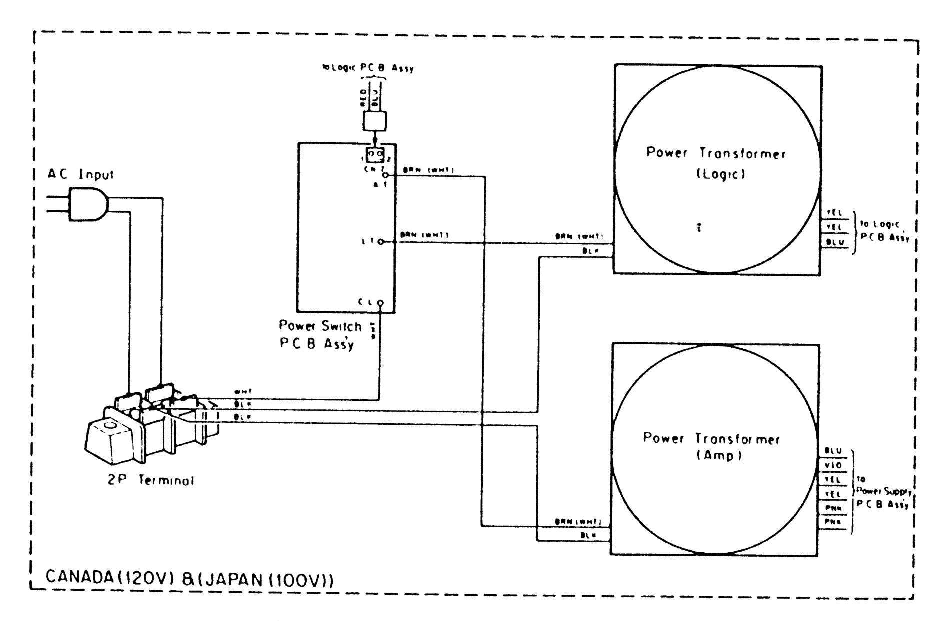
Fig. 7.1

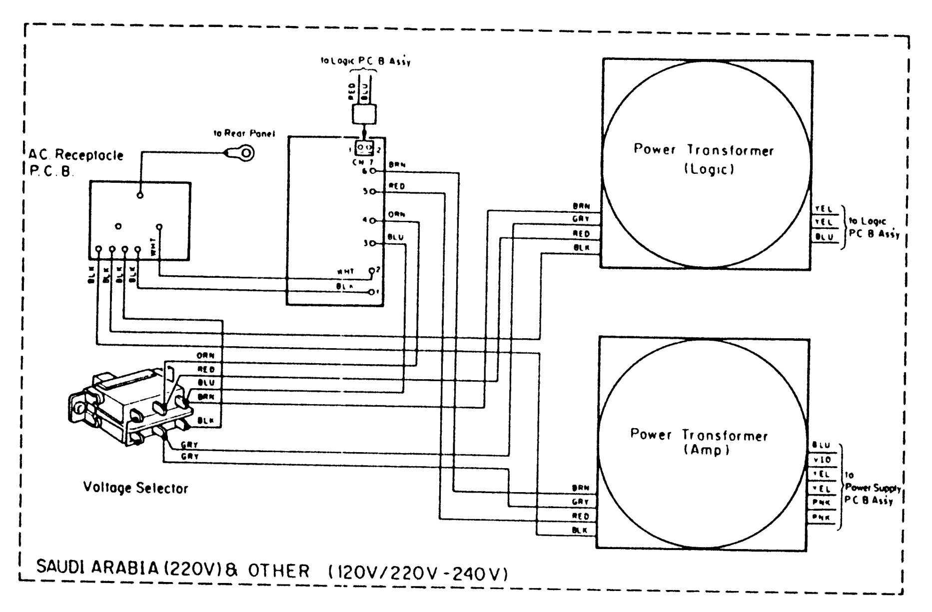


to Ground Bracket
BLK
BLK
Pin Jack L
P.C.B. Ass'y
CN-21
CN-22
RED
WHT
BLU
ORN
Selector P.C.B. Ass'y
Pin Jack R
P.C.B. Ass'y
CN-23
CN-24
CN-28
CN-27
CN-26
Amp. L P.C.B. Ass'y
CN-12
CN-14
BLK (RED)
CN-25
CN-19
CN-27
CN-17
YEL
Amp. R P.C.B. Ass'y
CN-13
CN-15
CN-26
Volume Control
Motor
CN-9
Volume Indicator
P.C.B. Ass'y
CN-18
CN-20
BLK (BLK)
CN-28









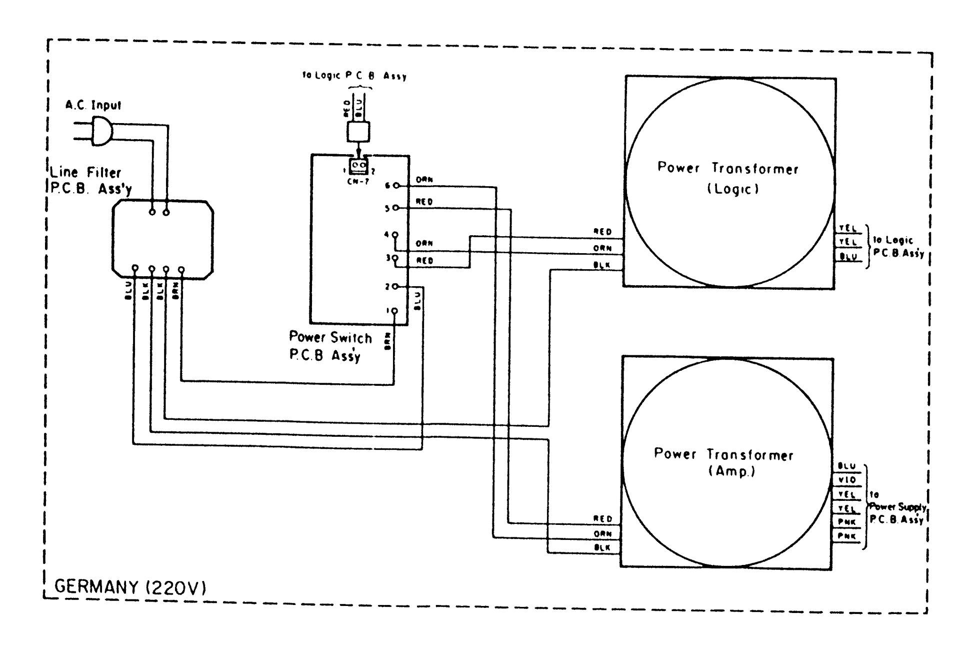
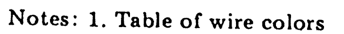


Fig. 7.2


Notes: 1. Table of wire colors

BRN — Brown	BLU — Blue	PNK — Pink
RED — Red	VIO — Violet	
YEL — Yellow	WHT — White	
ORN — Orange	GRY — Gray	
GRN — Green	BLK — Black	

2. Component side view of the P.C.B. is illustrated unless otherwise specified.
3. Wire tube color is shown in ( ).

8. BLOCK DIAGRAM

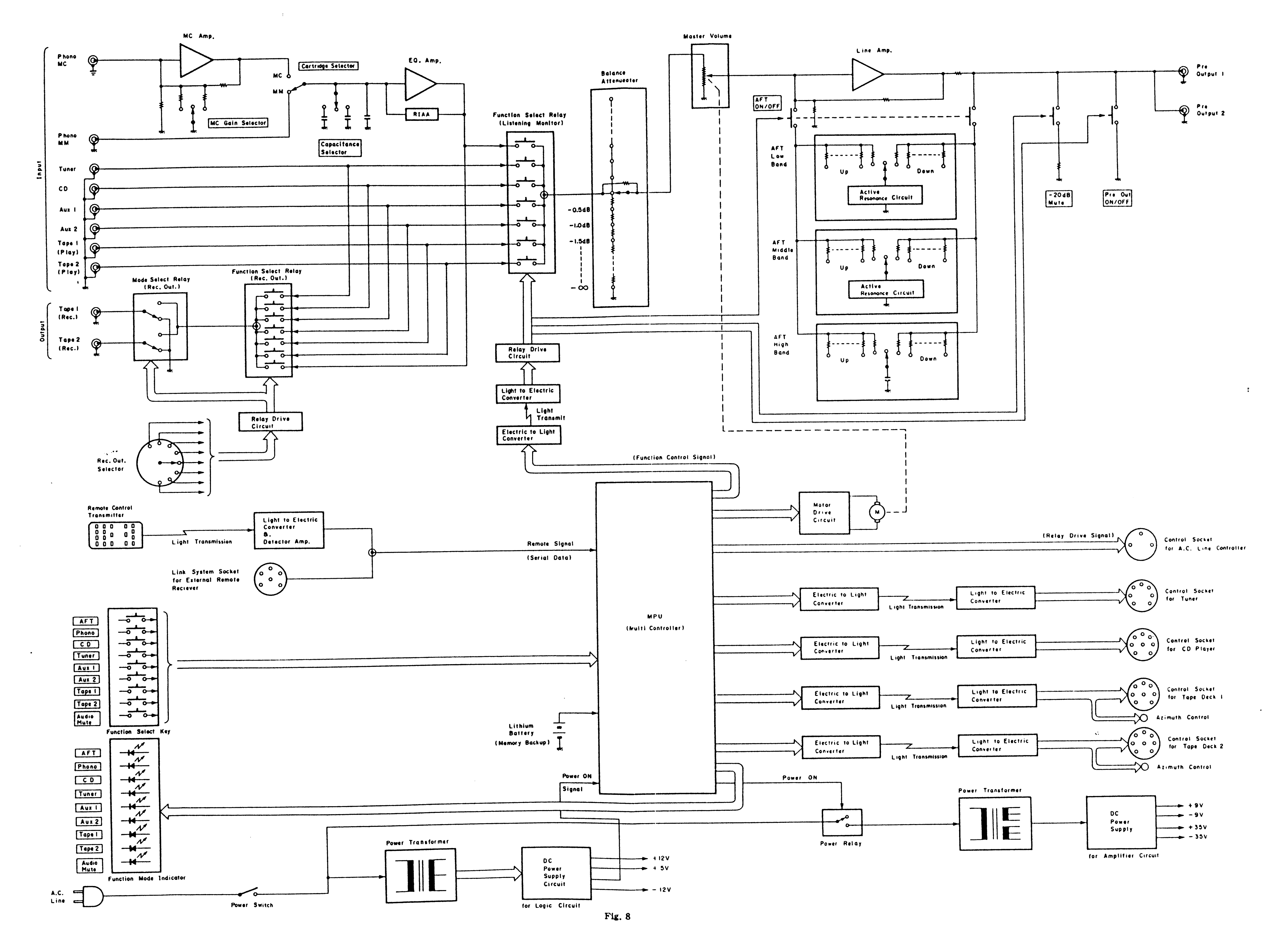


Fig. 8

9. REMOTE SENSOR RS-7 (OPTION)

9.1. Mechanism Ass'y and Parts List

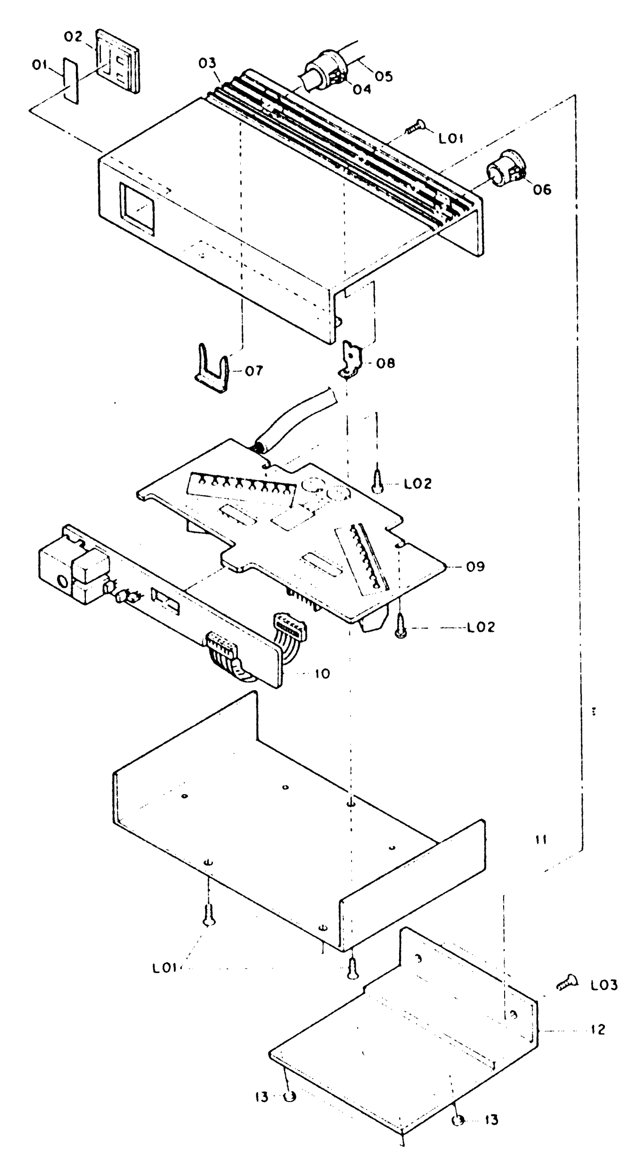


Fig. 9.1

Schematic Ref. No.	Part No.	Description	Q'ty
	FA03577A	Package Ass'y RS-7	1
	0F04016A	Package	1
	0F04015A	Sleeve	1
	0F04017A	Partition	1
	DA04028A	Accessory Ass'y (U.S.A., Canada, Australia, Saudi Arabia & Other)	1
	DA04029A	Accessory Ass'y (Europe)	1
	DA04030A	Accessory Ass'y (Japan)	1
	0D04705A	Owner's Manual (English) (except Japan)	1
	0D04714A	Owner's Manual (French, German) (Europe)	1
	0D04713A	Owner's Manual (Japanese) (Japan)	1
	0D04449A	Important Notice Card	1
	0D04352C	Warranty Card (U.S.A., Canada, Australia, Saudi Arabia & Other)	1
	0D04706A	Price Card (Japan)	1
	0B81687A	6P DIN Plug	1
	0B81686A	Snap Plate	1

Schematic Ref. No.	Part No.	Description	Q'ty
	0J05301A	Snap Bushing	1
	0E03404A	Anchor Nut	2
	0E03405A	Screw for Anchor Nut	2
	0E03402A	ST2x6 ⊕ Binding (Black Chromate)	2
		Remote Sensor RS-7 Serial No.: N61901001 -	
01	0J05314A	Remote Filter	1
02	0H05028A	Remote Lens	1
03	0H05025B	Top Cover	1
04	0J05301A	Snap Bush	1
05	0B82894A	8P DIN Cord	1
06	0J05302A	Hole Plug	1
07	0J05092A	Snap Plate	1
08	0J05297A	Bottom Angle	1
09	BA06495A	Control P.C.B. Ass'y	1
10	BA06494A	Receiver P.C.B. Ass'y	1
11	0H05026A	Bottom Cover	1
12	0H05027B	Unit Stand	1
13	0J05303A	Leg	4
L01	0E03401A	ST2x6 ⊕ Countersunk	4
L02	0E03402A	ST2x6 ⊕ Binding (Black Chromate)	2
L03	0E00940A	M3x6 ⊕ Countersunk (Black Chromate)	2

9.2. Mounting Diagrams and Parts List

9.2.1. Receiver P.C.B. Ass'y

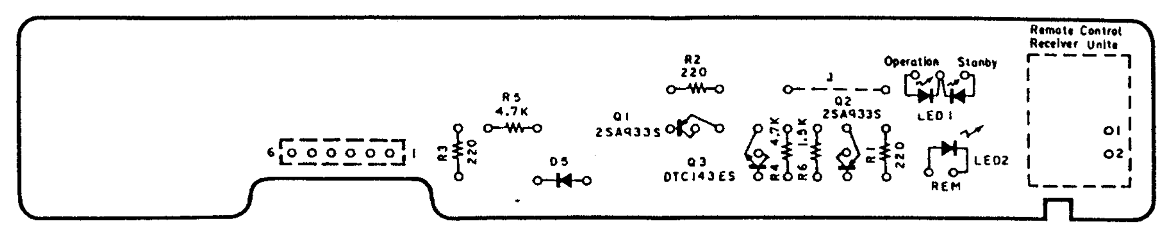


Fig. 9.2.1

9.2.2. Control P.C.B. Ass'y

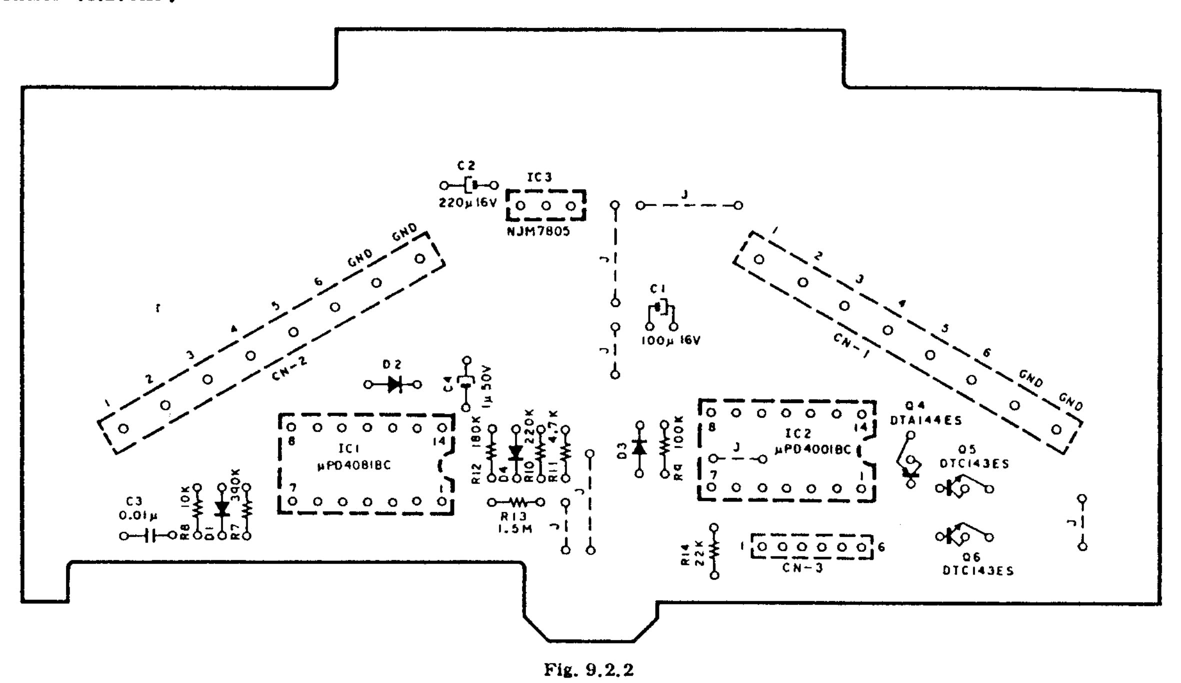


Fig. 9.2.2

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06494A	Receiver P.C.B. Ass'y		BA06495A	Control P.C.B. Ass'y
	0B60412A	Receiver P.C.B.		0B60413A	Control P.C.B.
Q1,2	0B10026A	TR 2SA933S	IC1	0B06219A	IC µPD4081BC
		(Q,R,S)	IC2	0B06143A	IC µPD4001BC
Q3	0B10070A	TR DTC143ES	IC3	0B11105A	IC NJM7805
LED1	0B12399A	LED SPB-26	Q4	0B10053A	TR DTA144ES
		(GRN, ORN)	Q5,6	0B10070A	TR DTC143ES
LED2	0B12407A	LED SLB-26MW	D1,2,3,4	0B06398A	SID 1SS176
		(GRN)	R7	0B09739A	RK 390K 1/6W J
D5	0B06398A	SID 1SS176	R8	0B09701A	RK 10K 1/6W J
R1,2,3	0B09661A	RK 220 1/6W J	R9	0B09725A	RK 100K 1/6W J
R4,5	0B09693A	RK 4.7K 1/6W J	R10	0B09733A	RK 220K 1/6W J
R6	0B09681A	RK 1.5K 1/6W J	R11	0B09693A	RK 4.7K 1/6W J
CN3	0B82907A	6P-H Connector	R12	0B09731A	RK 180K 1/6W J
	0B19005A	Remote Control	R13	0B09380A	RK 1.5M 1/4W J
		Receiver Unit (1)	R14	0B09709A	RK 22K 1/6W J
	0J05244A	LED Reflector CA-7	C1	0B01400A	CE 100µ 16V
		(1)	C2	0B0139[illegible]	[illegible] 220µ 16V
	0J05300A	LED Reflector RS-7	C3	0B056[illegible]	[illegible] 0.01µ 50V J
		(1)	C4	0B014[illegible]	[illegible] 1µ 50V
			CN1,2	0B816[illegible]	[illegible]rminal S-306
			CN3	0B810[illegible]	[illegible]Post (White)

9.3. Schematic Diagram

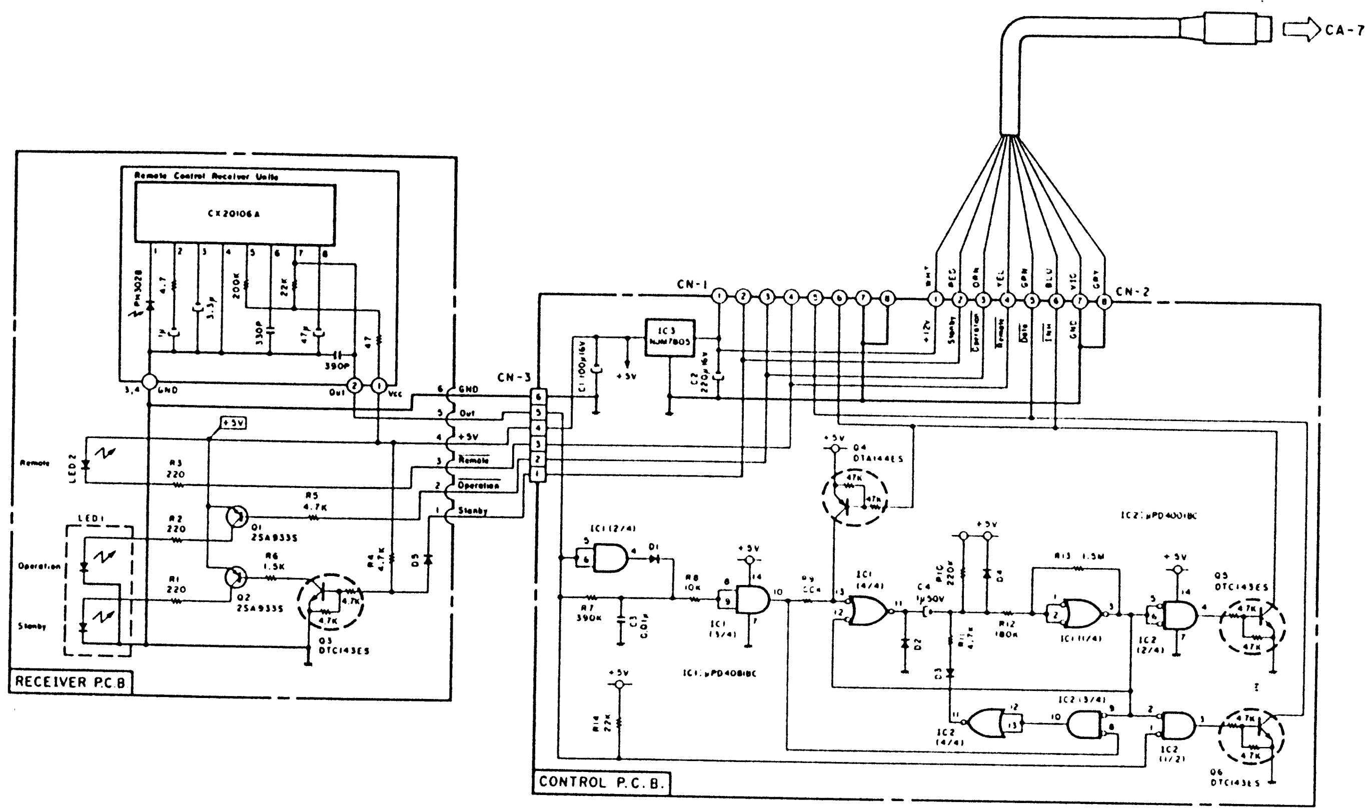


Fig. 9.3

Note: Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.

10. SPECIFICATIONS

Input Sensitivity/Impedance	
Phono MC (36 dB Gain)	40 μV/100 ohms
(30 dB Gain)	80 μV/100 ohms
(24 dB Gain)	160 μV/100 ohms
Phono MM	2.5 mV/50 kohms
Tuner/CD/Aux/Tape	150 mV/12.5 kohms
Input Sensitivity (New IHF)	
Phono MC (36 dB Gain)	10 μV
(30 dB Gain)	20 μV
(24 dB Gain)	40 μV
Phono MM	0.625 mV
Tuner/CD/Aux/Tape	37.5 mV
Maximum Input Level (1 kHz, Non-Clipping Level, New IHF)	
Phono MC (36 dB Gain)	5 mV
(30 dB Gain)	10 mV
(24 dB Gain)	20 mV
Phono MM	320 mV
Output Level/Impedance	
Pre Out	2 V/1 kohms
Rec Out	150 mV/200 ohms
Maximum Output Level	
(20 — 20,000 Hz, 1% THD, Pre Out, New IHF)	7V
Total Harmonic Distortion (20 — 20,000 Hz)	
Phono MC to Rec Out, 1V	
(36 dB Gain)	Less than 0.004 %
(24 dB Gain)	Less than 0.002 %
Phono MM to Rec Out, 1V	Less than 0.002 %
Tuner/CD/Aux/Tape to Pre Out, 2V	Less than 0.002 %
Frequency Response	
Tuner/CD/Aux/Tape	1 — 100,000 Hz + 0, −3 dB 1 — 20,000 Hz + 0, −0.2 dB
RIAA Deviation	
Phono MC	20 — 20,000 Hz ± 0.2 dB
Phono MM	20 — 20,000 Hz ± 0.2 dB
Signal to Noise Ratio (IHF A-WTD)	
Phono MC (0.5 mV Input, 0.5 V Pre Out, Input Shorted)	
(36 dB Gain)	Better than 87 dB
(30 dB Gain)	Better than 86 dB
(24 dB Gain)	Better than 84 dB
Phono MM (5 mV Input, 0.5 V Pre Out, Input Shorted)	Better than 88 dB
Tuner/CD/Aux/Tape (0.5 V Input, 0.5 V Pre Out, Input Shorted)	Better than 94 dB
Stereo Separation (100 Hz/1 k Hz/10 k Hz)	
Phono MC (0.5 mV Input, 1 V Pre Out, Input Shorted)	
(36 dB Gain)	95/100/90 dB
(24 dB Gain)	90/100/90 dB
Phono MM (5 mV Input, 1 V Pre Out, Input Shorted)	100/105/95 dB
Tuner/CD/Aux/Tape (0.5 V Input, 1V Pre Out, Input Shorted)	120/110/100 dB
AFT (Acoustical Fine Tuning) Characteristics	
Low	25 Hz ±5 dB (0.5 dB steps)
Mid	250 Hz ±5 dB (0.5 dB steps)
High	30 kHz ±5 dB (0.5 dB steps)
Audio Mute	— 20 dB
Remote Power On/Off Control Output	24 V DC
Power Source	120, 120/220-240, 220 or 240 V AC, 50/60 Hz (According to country of sale)
Power Consumption	42 W max.
Dimensions	435 (W) x 82 (H) x 310 (D) mm 17-1/8 (W) x 3-1/4 (H) x 12-3/16 (D) inches
Approximate Weight	7.2 kg, 15 lbs. 14 oz.

<Remote Control Unit RM-7CA>

Principle . . . . Infrared pulse system
Power Supply . . . . 3 V DC (1.5 V x 2)
Dimensions . . . . 62 (W) x 18 (H) x 175 (D) mm
2-7/16 (W) x 11/16 (H) x 6-7/8 (D) inches
Approximate Weight . . . . 130 g, 5 oz. (including batteries)

- Specifications and design are subject to change for further improvement without notice.